DCMCP

BURROUGHS B-5700 ESPOL COMPILER MARK XVI.0.116 THURSDAY, 09/01/77, 11:59 AM.

MCPA /DISK
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SOURCE FILE: SYMBOL /MCP

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%B 5 7 0 0   M C P  M A R K     XVI.0.178                  05/09/77%179-        00001000 P  0000:0
%                                                                               00002000 T  0000:0
  COMMENT: * TITLE: B5500/B5700 MARK XVI SYSTEM RELEASE                *        00002010 T  0000:0
           * FILE ID: SYMBOL/MCP   TAPE ID: SYMBOL1/FILE000            *        00002011 T  0000:0
           * THIS MATERIAL IS PROPRIETARY TO BURROUGHS CORPORATION     *        00002012 T  0000:0
           * AND IS NOT TO BE REPRODUCED, USED, OR DISCLOSED           *        00002013 T  0000:0
           * EXCEPT IN ACCORDANCE WITH PROGRAM LICENSE OR UPON         *        00002014 T  0000:0
           * WRITTEN AUTHORIZATION OF THE PATENT DIVISION OF           *        00002015 T  0000:0
           * BURROUGHS CORPORATION, DETROIT, MICHIGAN 48232            *        00002016 T  0000:0
           *                                                           *        00002017 T  0000:0
           * COPYRIGHT (C) 1965, 1971, 1972, 1973, 1974                *        00002018 T  0000:0
           *      BURROUGHS CORPORATION                                *        00002019 T  0000:0
           *  AA759915   AA320206   AA393180   AA332366   AA465080     *        00002020 T  0000:0
           *  AA495655   AA495656                                       *;       00002021 T  0000:0
 $ SET OMIT = NOT(DEBUGGING)                                                    00002100 T  0000:0
BEGIN                                                                           00003000 T  0000:0
DEFINE MIXMAX= 9#;          COMMENT: MIXMAX MAY NOT BE LARGER THAN 29;          00004000 T  0000:0
PRT(201) = *SEGMENT DESCRIPTOR*
           DEFINE JOBNUMAX=40#;          COMMENT: JOBNUMAX SHOULD BE ABOUT      00005000 T  0000:0
                                                  2*MIXMAX+30;                  00005001 T  0000:0
           DEFINE   MARKLEVEL=           % MARK LEVEL IN ALPHA                  00005010 T  0000:0
                        "XVI.0"                                                 00005020 T  0000:0
                #, PATCHLEVEL=           % PATCH RELEASE LEVEL IN ALPHA         00005030 T  0000:0
                        "178"                                          %179-    00005040 P  0000:0
                #, LOCALEVEL=            % LOCAL LEVEL IN ALPHA                 00005050 T  0000:0
                        " "                                                     00005060 T  0000:0
                #;                                                              00005070 T  0000:0
           DEFINE   MCPTYPE        = 63#,                                       00005100 T  0000:0
                    DCINTYPE       = 62#,                                       00005120 T  0000:0
                    TSSINTYPE      = 61#;                                       00005140 T  0000:0
           COMMENT THE ESPOL COMPILER APPROPRIATELY TYPES THE MCP &              00005160 T  0000:0
               INTRINSICS FILE HEADERS SO THAT A VALIDITY CHECK MAY BE MADE      00005180 T  0000:0
               DURING INITIALIZATION AND AT CI AND CM TIME.  HEADER[4].[36:6]    00005185 T  0000:0
               IS THE FIELD USED TO CONTAIN THE TYPE;                           00005190 T  0000:0
           DEFINE FSAD = [1:15]#,                                               00005200 T  0000:0
                  UNUM = [16:5]#,                                               00005210 T  0000:0
                  BYBY(BYBY1,BYBY2) =                                           00005220 T  0000:0
                        BEGIN STREAM(A:=TYPEDSPACE(10,SPOUTMSGAREAV) : );%  %167- 00005230 P  0000:0
                            BEGIN DI:=A; DS:=BYBY2 LIT BYBY1; END;              00005240 T  0000:0
                            PUNT(0);                                            00005250 T  0000:0
                        END#;                                                   00005260 T  0000:0
            DEFINE RESERVEDISKSIZE=2000#;                                       00005300 T  0000:0
               COMMENT TRACESIZE IS THE SIZE OF THE CORE AREA USED TO STORE TRACE 00005500 T  0000:0
                            INFORMATION BEFORE IT IS WRITTEN ON DISK.           00005600 T  0000:0
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                        TRACAREASTART IS THE ABSOLUTE DISK ADDRESS OF THE TRACE          00005700 T  0000:0
                              AREA ON DISK.                                              00005800 T  0000:0
                        TRACAREASIZE IS THE SIZE (IN DISK SEGMENTS) OF THE TRACE         00005900 T  0000:0
                              AREA ON DISK;                                              00005950 T  0000:0
                    DEFINE TRACESIZE=30#,TRACAREASTART=10000#,TRACAREASIZE=480#;         00006000 T  0000:0
                    DEFINE HANG=DO UNTIL FALSE#;                                        00006100 T  0000:0
                    DEFINE LEFTARROW = "←"#;                                            00006150 T  0000:0
                     $ SET OMIT = NOT(SAVERESULTS)                                      00006200 T  0000:0
                     REAL JUNK=5;%                                                      00007000 T  0000:0
PRT(5) = JUNK
                        DEFINE PSEUDOMAX   = 31 #,    % MAX NO OF PSEUD-RDRS 0-ORIGIN   00007050 T  0000:0
                               PSEUDOMAX1  = 32 #,    % MAX NO OF PSEUD-RDRS 1-ORIGIN   00007055 T  0000:0
                               PSEUDOMAXT  = 63 #;    % # ENTRIES IN TINU TABLE -2       00007060 T  0000:0
                    COMMENT TO REDEFINE MAX NO. OF PSEUDO RDRS,SIZE AND INITIALIZATION   00007061 T  0000:0
                             OF TINU[*] AT 00241900 MUST ALSO BE MODIFIED ACCORDINGLY;   00007062 T  0000:0
                        COMMENT : PSEUDOMAX  MUST BE ≥0 AND ≤ 31                        00007065 T  0000:0
                                  PSEUDOMAX1 MUST BE ≥ 0 AND ≤ 32                       00007070 T  0000:0
                                  PSEUDOMAXT MUST BE ≥ 31 AND ≤ 63;%                    00007075 T  0000:0
                    COMMENT TO ADJUST THE PRIORITY, CORE ESTIMATE, AND STACK SIZE       00007200 T  0000:0
                           OF LIBMAIN/DISK, SEE SEQUENCE NUMBER 45075470;               00007210 T  0000:0
                     LABEL GOGOGO,NORMALERROR,P2BUSY,TIMER,EXTERNAL,INQUEST,            00008000 T  0000:0
                           PROCSWIT,P2FAKE,KEYBOARDREQUEST,RETURN,COMINIT,MEMORYPARITY  %WF 00009000 T  0000:0
                           ;                                                            00010000 T  0000:0
                    DEFINE GETUSERDISK(GETUSERDISK1)=PETUSERDISK(GETUSERDISK1,0)#;%     00012001 T  0000:0
                     $ SET OMIT = NOT(DUMP OR DEBUGGING)                                00012159 T  0000:0
                         DEFINE DUMPNOW(DUMPNOW1) =                                     00012160 T  0000:0
                           DUMPCORE(DUMPNOW1&(GETSPACE(22,0,0) + 3)[15:33:15])#;%       00012165 T  0000:0
                     $ POP OMIT                                                         00012166 T  0000:0
                        INTEGER RRRMECH=@201;%                                          00013000 T  0000:0
PRT(201) = RRRMECH
                    DEFINE SPACE(SPACE1) =(GETSPACE(SPACE1,0,0) + 2)#;                  00013500 T  0000:0
                    DEFINE MCP=M[1]#; %PRIVILEDGED USERCODE STORED IN M[1]              00013600 T  0000:0
                    DEFINE % KEYIN TABLE DEFINE VALUES FOR "REPLY"                      00013700 T  0000:0
                       VAX = 01#,                                                       00013710 T  0000:0
                       VIL = 02#,                                                       00013720 T  0000:0
                       VUL = 03#,                                                       00013730 T  0000:0
                       VQT = 04#,                                                       00013740 T  0000:0
                       VOU = 05#,                                                       00013750 T  0000:0
                       VWY = 06#,                                                       00013760 T  0000:0
                       VRM = 12#,                                                       00013770 T  0000:0
                       VOK = 22#,                                                       00013780 T  0000:0
                       VFM = 23#,                                                       00013790 T  0000:0
                       VFR = 24#,                                                       00013800 T  0000:0
                       VOF = 25#,                                                       00013810 T  0000:0
                       VCC = 21#,                                                       00013820 T  0000:0
                       VIF = 32#;                                                       00013830 T  0000:0
                    DEFINE                                                              00013850 T  0000:0
                     $ SET OMIT = AUXMEM                                                00013860 T  0000:0
                          SPACESTACKSIZE = 80#;                                         00013870 T  0000:0
                     $ SET OMIT = NOT(AUXMEM)                                           00013880 T  0000:0
                    SAVE INTEGER PROCEDURE GETSPACE(SIZE,TYPE,SAVEF);%                  00014000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00000
PRT(202) = GETSPACE
                                   VALUE SIZE,TYPE,SAVEF;%                              00015000 T  0000:0
                                   INTEGER SIZE,TYPE;%                                  00016000 T  0000:0
                                   BOOLEAN SAVEF;          FORWARD;%                    00017000 T  0000:0
                    DEFINE                                                %167-         00017005 C  0000:0
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  TYPEDSPACE(TYPEDSPACE1,TYPEDSPACE2) =                                  %167-    00017010 C  0000:0
      (GETSPACE(TYPEDSPACE1,TYPEDSPACE2,0)+2)# %                         %167-    00017015 C  0000:0
 ,ARRAYDESC(ARRAYDESC1,ARRAYDESC2) =                                     %167-    00017020 C  0000:0
      ([M[GETSPACE(ARRAYDESC1,ARRAYDESC2,0)+2]] & ARRAYDESC1 [SIZE])# %           00017025 C  0000:0
 ,SAVEARRAYDESC(SAVEARRAYDESC1,SAVEARRAYDESC2) =                         %167-    00017030 C  0000:0
      ([M[GETSPACE(SAVEARRAYDESC1,SAVEARRAYDESC2,1)+2]]                  %167-    00017035 C  0000:0
                                       & SAVEARRAYDESC1 [SIZE])# %                00017040 C  0000:0
  ;                                                                      %167-    00017045 C  0000:0
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%        00017100 C  0000:0
%************************************************************************%        00017110 C  0000:0
%*                                                                      *%        00017120 C  0000:0
%*   MEMORY AREA TYPES STORED IN 3:6 FIELD OF FIRST MEMORY              *%        00017130 C  0000:0
%*   LINK OF ALL MEMORY AREAS                                           *%        00017140 C  0000:0
%*                                                                      *%        00017150 C  0000:0
%************************************************************************%        00017160 C  0000:0
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%        00017170 C  0000:0
DEFINE                                                                   %167-    00017180 C  0000:0
       UNKNOWNAREAV      =  0# %                                         %167-    00017190 C  0000:0
      ,CODEAREAV         =  1# %                                         %167-    00017200 C  0000:0
      ,DATAAREAV         =  2# %                                         %167-    00017210 C  0000:0
      ,IOBUFFERAREAV     =  3# %                                         %167-    00017220 C  0000:0
      ,ALGOLFIBAREAV     =  4# %                                         %167-    00017230 C  0000:0
      ,INQUIRYBUFFAREAV  =  5# %                                         %167-    00017240 C  0000:0
      ,COBOLFIBAREAV     =  6# %                                         %167-    00017250 C  0000:0
      ,TYPE7INTAREAV     =  7# %                                         %167-    00017260 C  0000:0
      ,DISKHEADERAREAV   =  8# %                                         %167-    00017270 C  0000:0
      ,MAINTBUFFAREAV    =  9# %                                         %167-    00017280 C  0000:0
      ,LBLEQNAREAV       = 10# %                                         %167-    00017290 C  0000:0
      ,SEGZEROAREAV      = 11# %                                         %167-    00017300 C  0000:0
      ,STACKAREAV        = 12# %                                         %167-    00017310 C  0000:0
      ,TYPE13INTAREAV    = 13# %                                         %167-    00017320 C  0000:0
      ,SCRATCHDIRAREAV   = 14# %                                         %167-    00017330 C  0000:0
      ,OPSETAREAV        = 15# %                                         %167-    00017340 C  0000:0
      ,DIRTOPAREAV       = 16# %                                         %167-    00017350 C  0000:0
      ,SPOUTMSGAREAV     = 17# %                                         %167-    00017360 C  0000:0
      ,UVROWAREAV        = 18# %                                         %167-    00017370 C  0000:0
      ,JARROWAREAV       = 19# %                                         %167-    00017380 C  0000:0
      ,CIDROWAREAV       = 20# %                                         %167-    00017390 C  0000:0
      ,INQINPUTAREAV     = 21# %                                         %167-    00017400 C  0000:0
      ,INTARRAYAREAV     = 22# %                                         %167-    00017410 C  0000:0
      ,RJEINPUTAREAV     = 23# %                                         %167-    00017420 C  0000:0
      ,DCQUEUEAREAV      = 24# %                                         %167-    00017430 C  0000:0
      ,DALOCROWAREAV     = 25# %                                         %167-    00017440 C  0000:0
      ,SHEETAREAV        = 26# %                                         %167-    00017450 C  0000:0
      ,STAWORDAREAV      = 27# % DC MCP ONLY                             %167-    00017460 C  0000:0
      ,KEYINBUFFAREAV    = 28# %                                         %167-    00017470 C  0000:0
      ,FSAREAV           = 29# %                                         %167-    00017480 C  0000:0
      ,DC19QUEUEAREAV    = 30# % DC MCP ONLY                             %167-    00017490 C  0000:0
      ,AVTABLEAREAV      = 31# %                                         %167-    00017500 C  0000:0
      ,TRACETABLEAREAV   = 32# % DC MCP ONLY                             %167-    00017510 C  0000:0
      ,SEGDICTAREAV      = 33# %                                         %167-    00017520 C  0000:0
      ,STACKPRTAREAV     = 34# %                                         %167-    00017530 C  0000:0
      ,MCPTABLEAREAV     = 35# %                                         %167-    00017540 C  0000:0
      ,IRSTACKAREAV      = 36# %                                         %167-    00017550 C  0000:0
      ,FPBAREAV          = 37# %                                         %167-    00017560 C  0000:0
      ,CONTROLCARDAREAV  = 38# %                                         %167-    00017562 C  0000:0
      ,LABELAREAV        = 39# %                                         %167-    00017564 C  0000:0
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                  ,MDUMPAREAV        = 40# %                                              %167-          00017566 C   0000:0
                  ,ESPDISKAREAV      = 41# %                                              %167-          00017568 C   0000:0
                  ,LOGAREAV          = 42# %                                              %167-          00017570 C   0000:0
                  ,CANDEINPUTAREAV   = 43# % TSS MCP ONLY                                 %167-          00017572 C   0000:0
                  ,OBJOBINPUTAREAV   = 44# % TSS MCP ONLY                                 %167-          00017574 C   0000:0
                  ,TYPE45            = 45# %                                              %167-          00017576 C   0000:0
                  ,TYPE46            = 46# %                                              %167-          00017578 C   0000:0
                  ,TYPE47            = 47# %                                              %167-          00017580 C   0000:0
                  ,TYPE48            = 48# %                                              %167-          00017582 C   0000:0
                  ;                                                                       %167-          00017600 C   0000:0
            %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%          00017700 C   0000:0
            %*******************************************************************************%          00017710 C   0000:0
            %*                                                                             *%          00017720 C   0000:0
            %*                           M E M O R Y   L I N K S                           *%          00017730 C   0000:0
            %*                                                                             *%          00017740 C   0000:0
            %*******************************************************************************%          00017750 C   0000:0
            %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%          00017760 C   0000:0
            %                                                                     %167-          00017762 C   0000:0
            %     FIELDS OF MEMORY LINK 0 OF ALL AREAS                            %167-          00017764 C   0000:0
            %                                                                     %167-          00017766 C   0000:0
            FIELD                                                                 %167-          00017770 C   0000:0
                 AREAAVAILF     = 01:01 % = 0 FOR IN-USE AREA, = 1 FOR AVAIL. AREA               00017780 C   0000:0
                ,AREASAVEF      = 02:01 % = 1 FOR IN-USE SAVE AREA, = 0 FOR OLAY AREA            00017790 C   0000:0
                ,AREATYPEF      = 03:06 % TYPE OF AREA (SEE ABOVE)                %167-          00017800 C   0000:0
                ,AREAMIXF       = 09:06 % MIX INDEX OF OWNER OF AREA              %167-          00017810 C   0000:0
                ,AREABACKLINKF  = 18:15 % ADDRESS OF PREVIOUS AREA                %167-          00017820 C   0000:0
                ,AREAFWDLINKF   = 33:15 % ADDRESS OF NEXT AREA                    %167-          00017830 C   0000:0
                ;                                                                 %167-          00017840 C   0000:0
            SAVE REAL PROCEDURE WAITIO(IOD,MASK,U);%                                             00018000 T   0000:0
                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00000
PRT(203) = WAITIO
                          VALUE IOD,MASK,U; REAL IOD,MASK,U; FORWARD;%                           00019000 T   0000:0
            SAVE PROCEDURE DISKWAIT(CORE,SIZE,DISK);                                             00019100 T   0000:0
                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00000
PRT(204) = DISKWAIT
                 VALUE CORE,SIZE,DISK;                                                           00019200 T   0000:0
                 REAL CORE,SIZE,DISK;                                                            00019300 T   0000:0
                 FORWARD;                                                                        00019400 T   0000:0
            PROCEDURE ERRORFIXER(TYPE); VALUE TYPE; REAL TYPE; FORWARD;                          00019500 T   0000:0
                                                                START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(205) = ERRORFIXER
            SAVE PROCEDURE SNOOZE(PRYR,ADDRESS,MASK);  VALUE PRYR,ADDRESS,MASK;                  00020000 T   0000:0
                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00000
PRT(206) = SNOOZE
                REAL PRYR; NAME ADDRESS; ARRAY MASK[*]; FORWARD;                                 00021000 T   0000:0
            DEFINE SLEEP(SLEEP1,SLEEP2)=SNOOZE(PRYOR[P1MIX],SLEEP1,SLEEP2)#;                     00021500 T   0000:0
            ARRAY PRYOR[*];                                                                      00021600 T   0000:0
PRT(207) = PRYOR
            REAL P1MIX,P2MIX;  % SEE 00105000                                                    00021700 T   0000:0
PRT(210) = P1MIX
PRT(211) = P2MIX
            ARRAY SLATE[*];%                                                                     00022000 T   0000:0
PRT(212) = SLATE
            REAL NSLATE,LSLATE;%                                                                 00023000 T   0000:0
PRT(213) = NSLATE
PRT(214) = LSLATE
                 DEFINE SLATESIZE=16#,SLATEND=SLATESIZE-1#;%SIZE MUST BE TWO POWER               00023100 T   0000:0
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                REAL NT1=@160,NT2=@161,NT3=@162,NT4=@163,NT5=@164,NT6=@165,NT7=@166;                    00024000 T  0000:0
PRT(160) = NT1
PRT(161) = NT2
PRT(162) = NT3
PRT(163) = NT4
PRT(164) = NT5
PRT(165) = NT6
PRT(166) = NT7
                REAL CLOCK = @170; % CLOCK.[9:33] CONTAINS THE NUMBER OF TIME INTERVAL                  00024005 C  0000:0
PRT(170) = CLOCK
                                   % INTERRUPTS PROCESSED SINCE HALT LOAD. CLOCK.[42:6]                00024006 C  0000:0
                                   % ALWAYS EQUALS ZERO.                                  %156-       00024007 C  0000:0
                COMMENT NT1 THRU NT7 ARE USED BY THE MCP FOR TEMPORARY STORAGE.                         00024010 T  0000:0
                        ALL PROCESSES THAT USE THESE VARIABLES ASSUME THAT IF CONTROL                   00024020 T  0000:0
                        IS LOST, THEIR CONTENT MAY HAVE BEEN CHANGED BY THE TIME                        00024030 T  0000:0
                        THAT CONTROL IS REGAINED.                                                       00024040 T  0000:0
                END COMMENT;                                                                            00024050 T  0000:0
                ARRAY TSKA = NT3[*];                                                                    00024060 T  0000:0
PRT(162) = TSKA
                REAL MCPBASE;                                                                           00024100 T  0000:0
PRT(215) = MCPBASE
                COMMENT MCPBASE CONTAINS THE DISK ADDRESS (OCTAL) OF THE BEGINNING                      00024200 T  0000:0
                        OF THE MCP THAT IS CURRENTLY IN USE. THIS ADDRESS IS PASSED TO                  00024210 T  0000:0
                        THE MCP BY THE LOADER ROUTINE AT EACH HALT/LOAD IN M[0].[18:30].                00024220 T  0000:0
                        WHEN THE ESPBIT ROUTINE IS CALCULATING THE DISK ADDRESS                         00024230 T  0000:0
                        OF AN MCP SEGMENT, IT ADDS MCPBASE TO THE ADDRESS THAT                          00024240 T  0000:0
                        IS CONTAINED IN THE PRT CELL FOR THAT SEGMENT.                                  00024250 T  0000:0
                END COMMENT;                                                                            00024260 T  0000:0
                LABEL NOTHINGTODO,INITIATE,START,STACKOVERFLOW,IOBUSY;                                  00024270 T  0000:0
                 $ SET OMIT = NOT(AUXMEM OR MONITOR)                                                    00024299 T  0000:0
                 $ SET OMIT = NOT MONITOR                                                               00024590 T  0000:0
                DEFINE MCPNAMESEG = (DIRECTORYTOP-7)#;                                                  00024910 T  0000:0
                COMMENT MCPNAMESEG CURRENTLY CONTAINS THE FOLLOWING:                                    00024920 T  0000:0
                WORD[ 0]-WORD[15] - FILE IDS OF THE AUXDATA FILES FOR MCP & INTRINCS.                   00024930 T  0000:0
                WORD[16]-WORD[19] - CONTAIN THE WORD "AUXMEM " AS A MARKER.                             00024940 T  0000:0
                WORD[20]-WORD[27] - FILE IDS OF THE MCP"S AT HALT/LOAD.                                 00024950 T  0000:0
                WORD[28] - USED BY DISKSQUASH FOR COMM. BETWEEN SHAREDISK SYSTEMS.                      00024960 T  0000:0
                ;                                                                                       00024970 T  0000:0
                 $ SET OMIT = NOT(NEWLOGGING)                                                           00024999 T  0000:0
                 $ SET OMIT = NEWLOGGING                                                                00025299 T  0000:0
                DEFINE STARTLOG(STARTLOG1)=                                                             00025300 T  0000:0
                     PROCTIME[STARTLOG1]←(*P(DUP))-CLOCK-P(RTR)#,                                       00025400 T  0000:0
                   STOPLOG(STOPLOG1,STOPLOG2)=                                                          00025500 T  0000:0
                     PROCTIME[STOPLOG1] ←(*P(DUP))+CLOCK+P(RTR)#;                                       00025600 T  0000:0
                 $ POP OMIT                                                                             00025601 T  0000:0
                SAVE PROCEDURE ESPBIT; COMMENT PRESENCE BIT ROUTINE FOR ESP SEGMENTS ;%                 00025900 T  0000:0
                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00000
PRT(216) = ESPBIT
                  BEGIN INTEGER PRTLOC,SYLLABLE,LOC,SIZE;%                                              00026000 T  0000:0
STACK(F+1) = PRTLOC
STACK(F+2) = SYLLABLE
STACK(F+3) = LOC
STACK(F+4) = SIZE
                        FIELD MAYBEWORKEDON = [7:1]; %                          %156-                   00027000 P  0000:0
                        ARRAY MYSELF=ESPBIT[*];%                                                        00028000 T  0000:0
PRT(216) = MYSELF
                        REAL RCW=+0,DISKREAD;%                                                          00029000 T  0000:0
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STACK(F+0) = RCW
STACK(F+5) = DISKREAD
                    LABEL MAKEPRESENT, TRYAGAIN;                                %156-
          $ SET OMIT = NOT(NEWLOGGING)
                    PRTLOC←(RCW INX 0)&RCW[30:10:2];%
                    STREAM(RSLT←[SYLLABLE],CL←PRTLOC);%
                         BEGIN SI←CL; SI←SI+2; DI←RSLT; DI←DI+6; DS←2 CHR END;

                    PRTLOC ← IF SYLLABLE THEN NT4%
                                        ELSE SYLLABLE.[36:10];%
                    SYLLABLE := @104;    % THIS IS THE CODE WE WILL PASS TO
                                         % GETSPACE THE FIRST TIME. IT REQUESTS
                                         % OVERLAY MEMORY FOR THE MCP AND THAT
                                         % WE WANT TO BE RETURNED TO ON A NO
                                         % MEM.                               %156-
                    IF MEMORY[PRTLOC].MAYBEWORKEDON THEN%
          MAKEPRESENT: BEGIN MEMORY[PRTLOC].MAYBEWORKEDON←FALSE;%
                    SIZE←MEMORY[PRTLOC].[8:10];%
          %
          %                                                                     %156-
          %         NOW WE WILL ATTEMPT TO GET SPACE FOR THIS MCP PROC.
          %         IF WE FAIL WE WILL WAIT FOR A SECOND AND THEN TRY
          %         AGAIN. THIS ENSURES THAT IF WE GET DS-ED WHILE              %156-
          %         SLEEPING WAITING FOR MEMORY WE WILL NOT LEAVE THE
          %         TOGGLE LOCKED UP FOR THIS PROCEDURE.                        %156-
          %                                                                     %156-
                    IF (LOC:=GETSPACE(SIZE,1,SYLLABLE))=0 THEN % NO MEM
                      BEGIN                                                     %156-
                        MEMORY[PRTLOC].MAYBEWORKEDON := TRUE; % UNLOCK I
                        SYLLABLE.[46:1] := TRUE; % DONT PRINT NO MEM
                        SLEEP([CLOCK],NOT CLOCK); % WAIT FOR ONE SECOND,
                        GO TO TRYAGAIN;                                         %156-
                      END;                                                      %156-

          $ SET OMIT = NOT(AUXMEM)
                         DISKREAD←(LOC+1)&SIZE[8:38:10]&@14[21:42:6]            %E
                                 &((SIZE+29) DIV 30)[27:42:6];%
                        STREAM(L:=LOC+1,N:=M[PRTLOC].[18:15]+MCPBASE,D:=0);
                          BEGIN SI←LOC N; DI←L; DS←8 DEC END;%

                        SYLLABLE←WAITIO(DISKREAD,0,18);%
          $ SET OMIT = NOT(AUXMEM)
                         MEMORY[LOC]←MEMORY[LOC]&0[2:47:1]&0[9:42:6];%
                         MEMORY[LOC+1]←PRTLOC&SIZE[18:33:15];%
                         M[PRTLOC] := M[PRTLOC] & TRUE [MAYBEWORKEDON] %%156-
                                      &(LOC+2)[33:33:15];%
          $ SET OMIT = NOT MONITOR
                       END ELSE%

          TRYAGAIN:    BEGIN SLEEP([M[PRTLOC]],0&TRUE [MAYBEWORKEDON]);%     %156-
                         IF (MEMORY[PRTLOC] INX 0)=(MYSELF INX 0) THEN%
                           GO TO MAKEPRESENT;%
                       END;%

          $ SET OMIT = NOT(NEWLOGGING)
                         POLISH(0,RDF,0,XCH,FCX,STS);%
                       GO TO POLISH(MEMORY[PRTLOC]);%
                 GO TO START; % PLACE DESC.IN PRT FOR MCP TO AUXMEM TRANSFER
```

```
00030000 P  0000:0
00030099 T  0000:0
00031000 T  0000:0
00032000 T  0003:2
00033000 T  0004:2
                    00033000
00034000 T  0005:3
00035000 T  0006:3
00035500 C  0008:3
00035510 C  0009:2
00035520 C  0009:2
00035530 C  0009:2
00035540 C  0009:2
00036000 T  0009:2
00037000 T  0011:0
00038000 T  0014:1
00039000 P  0016:1
00039005 C  0016:1
00039010 C  0016:1
00039015 C  0016:1
00039020 C  0016:1
00039025 C  0016:1
00039030 C  0016:1
00039035 C  0016:1
00039040 C  0018:2
00039045 C  0019:0
00039050 C  0021:3
00039055 C  0023:2
00039060 C  0025:1
00039065 C  0025:3
                    00039040
00039099 T  0025:3
00040000 T  0025:3
00041000 T  0027:3
00042000 T  0031:0
00043000 T  0034:2
                    00043000
00044000 T  0035:2
00044099 T  0037:1
00045000 T  0037:1
00046000 T  0041:2
00047000 P  0044:0
00048000 T  0046:0
00048099 T  0048:1
00049000 T  0048:1
                    00037000
00050000 P  0048:1
00051000 T  0051:3
00052000 T  0054:2
00053000 T  0055:0
                    00050000
00053099 T  0055:0
00054000 T  0055:0
00055000 T  0057:0
00055100 T  0058:1
```

```
PRT(217) = START
                        END ESPBIT;%
```

```
00056000 T  0058:3
                    00026000
SIZE= 0059 WORDS
```

```
                 LABEL FINDIT;                                                                00057100 T  000010
                 REAL    RESULT1=12 ,RESULT2=13 ,RESULT3=14 ,RESULT4=15 ;%                    00058000 T  000010
PRT(14) = RESULT1
PRT(15) = RESULT2
PRT(16) = RESULT3
PRT(17) = RESULT4
                 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%      00060000 P  000010
                 %**********************************************************************%      00060010 C  000010
                 %*                                                                    *%      00060020 C  000010
                 %*    M I S C E L L A N E O U S   F I E L D   D E F I N I T I O N S   *%      00060030 C  000010
                 %*                                                                    *%      00060040 C  000010
                 %**********************************************************************%      00060050 C  000010
                 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%      00060060 C  000010
                                                                                   %167-      00060070 C  000010
                   FIELD                                                           %167-      00060080 C  000010
                     FF            = 18:15 %                                       %167-      00060090 C  000010
                    ,CF            = 33:15 %                                       %167-      00060100 C  000010
                    ,CTF           = FF    %                                       %167-      00060110 C  000010
                    ,CTC           = CF    %                                       %167-      00060120 C  000010
                    ,MSFF          = 16:01 %                                       %167-      00060130 C  000010
                    ;                                                              %167-      00060999 C  000010
                 %                                                                 %167-      00061000 P  000010
                 %              FIELDS OF AIT ENTRY                                %167-      00061010 C  000010
                 %                                                                 %167-      00061020 C  000010
                   FIELD                                                           %167-      00061030 C  000010
                     FILEBIT       = 01:01 %                                       %167-      00061040 C  000010
                    ,OWNBIT        = 02:01 %                                       %167-      00061045 C  000010
                    ,DIMENSIONS    = 03:05 %                                       %167-      00061050 C  000010
                    ,BLKCNTR       = 08:10 %                                       %167-      00061060 C  000010
                    ,MOM           = 18:15 %                                       %167-      00061070 C  000010
                    ;                                                              %167-      00061999 C  000010
                 %                                                                 %167-      00062000 P  000010
                 %              FIELDS OF DATA DESCRIPTOR                          %167-      00062010 C  000010
                 %                                                                 %167-      00062020 C  000010
                   FIELD                                                           %167-      00062030 C  000010
                 %   FLAGBITF      = 00:00 %                                       %167-      00062040 C  000010
                 %   DATABITF      = 01:01 % ALWAYS OFF FOR A DATA DESCRIPTOR      %167-      00062050 C  000010
                     PBIT          = 02:01 % ON IF DESCRIPTOR POINTS TO AREA OF CORE  %167-   00062060 C  000010
                    ,SIZE          = 08:10 % SIZE OF ARRAY ROW IF ARRAY DESC.      %167-      00062070 C  000010
                                           % 0 FOR INDEXED DATA DESC, OR NAME DESC.   %167-   00062080 C  000010
                 %  ,MOMADDRESSF   = 18:15 % ADDRESS OF MOTHER DESCRIPTOR.         %167-      00062090 C  000010
                 %  ,ADDRESSF      = 33:15 % IF PBIT IS ON THEN THIS FIELD CONTAINS AN%167-   00062100 C  000010
                                           % ACTUAL CORE ADDRESS. IF THE PBIT IS OFF THEN     00062110 C  000010
                                           % IF THE VALUE OF THIS FIELD IS GREATER THAN       00062120 C  000010
                                           % OR EQUAL TO 512 THEN THE FIELD CONTAINS A%167-   00062130 C  000010
                                           % DALOC ADDRESS WHICH CAN BE USED TO LOCATE THE    00062140 C  000010
                                           % DATA IN THE OVERLAY DISK AREA ASSIGNED TO THE    00062150 C  000010
                                           % THE PROGRAM. IF THE VALUE OF THE FIELD IS LESS   00062160 C  000010
                                           % THAN 512 THEN THIS FIELD CONTAINS A CODE %167-   00062170 C  000010
                                           % INDICATING THE STATUS OF THE AREA.       %167-   00062180 C  000010
                                           %        0    NEVER ACCESSED OVERLAY AREA. %167-   00062190 C  000010
                                           %        1    NEVER ACCESSED SAVE AREA.    %167-   00062200 C  000010
                                           %        2    NEVER ACCESSED OVERLAY AREA WHICH    00062210 C  000010
                                           %               WHICH IS ASSIGNED TO AUXMEM.       00062220 C  000010
                                           %        5    INDICATES OVERLAY IS CURRENTLY IN    00062230 C  000010
                                           %               PROCESS FOR THIS AREA      %167-   00062240 C  000010
                                           %        6    INDICATES OLAY HAD IRRECOVERABLE     00062250 C  000010
```

```
                                %                ERROR WHEN OVERLAYING THIS AREA.          00062260 C  000010
                                %                THE NEXT ACCESS TO THE AREA WILL          00062270 C  000010
                                %                CAUSE THE PROGRAM TO BE TERMI-            00062280 C  000010
                                %                NATED.                          %167-     00062290 C  000010
                                %                                                %167-     00062999 C  000010
                                %                                                %167-     00067000 P  000010
                                %                                                %167-     00067010 C  000010
                                %                                                %167-     00067020 C  000010
                                %                                                %167-     00067030 C  000010
                                %                                                %167-     00067040 C  000010
                                %                                                %167-     00067050 C  000010
                                %                                                %167-     00067060 C  000010
                                %                                                %167-     00067070 C  000010
                                %                                                %167-     00067080 C  000010
                                %                                                %167-     00067090 C  000010
                                %                                                %167-     00067100 P  000010
                                %                                                %167-     00067110 C  000010
                                %                                                %167-     00067999 C  000010
                                                                                           00069000 T  000010
PRT(220) = AVAIL
                                                COMMENT AVAIL CONTAINS THE ADDRESS OF THE STOPPER%  00070000 T  000010
                                                        FOR AVAILABLE STORAGE LINKS ITS VALUE IS%   00071000 T  000010
                                                        THE HIGHEST AVAILABLE ADDRESS-1;%           00072000 T  000010
                                DEFINE MSTART = M[0].[CF]#;                                         00073000 T  000010
                                                COMMENT MSTART CONTAINS THE ADDRESS OF THE%         00074000 T  000010
                                                        FIRST AREA OF STORAGE AFTER END OF%         00075000 T  000010
                                                        ESP PROGRAM;%                               00076000 T  000010
                                DEFINE MEND   = M[0].[FF]#;                                         00077000 T  000010
                                                COMMENT THIS POINTS TO LAST STORAGE LINK IN%        00078000 T  000010
                                                        MEMORY;%                                    00079000 T  000010
                                ARRAY TAR[*]; %CONTAINS TOGLE BITS SET BY EACH JOB                  00079100 T  000010
PRT(221) = TAR
                                DEFINE LOCKTOG(LOCKTOG1)= BEGIN TOGLE:=TOGLE AND NOT LOCKTOG1;      00079200 T  000010
                                                TAR[P1MIX]:=TAR[P1MIX] OR LOCKTOG1; END#;           00079300 T  000010
                                DEFINE UNLOCKTOG(UNLOCKTOG1)= BEGIN TOGLE:=TOGLE OR UNLOCKTOG1;     00079400 T  000010
                                                TAR[P1MIX]:=TAR[P1MIX] AND NOT UNLOCKTOG1; END#;    00079500 T  000010
                                 REAL TOGLE;                                                        00080000 T  000010
PRT(222) = TOGLE
                                 DEFINE HP2TOG          = TOGLE.[47:1]#, HP2MASK        =   @1#     00080100 T  000010
                                       ,STATUSBIT       = TOGLE.[46:1]#, STATUSMASK     =   @2#     00080200 T  000010
                                       ,SHEETFREE       = TOGLE.[45:1]#, SHEETMASK      =   @4#     00080300 T  000010
                                       ,STACKUSE        = TOGLE.[44:1]#, STACKMASK      =  @10#     00080400 T  000010
                                       ,STOREDY         = TOGLE.[43:1]#, STOREMASK      =  @20#     00080500 T  000010
                                       ,USERDISKREADY= TOGLE.[42:1]#, USERDISKMASK=  @40#           00080600 T  000010
                                       ,HOLDFREE        = TOGLE.[41:1]#, HOLDMASK       = @100#     00080700 T  000010
                                       ,NSECONDREADY    = TOGLE.[40:1]#, NSECONDMASK    = @200#     00080800 T  000010
                                       ,ABORTABLE       = TOGLE.[39:1]#, ABORTMASK      = @400#     00080900 T  000010
                                       ,BUMPTUTIME      = TOGLE.[38:1]#, BUMPTUMASK     =@1000#     00080950 T  000010
                                       ,KEYBOARDREADY   = TOGLE.[37:1]#, KEYBOARDMASK   =@2000#     00081000 T  000010
                                       ,NOBACKTALK      = TOGLE.[36:1]#, NOBACKTALKMASK=@4000#     00081100 T  000010
                                       ,QTRDY         = TOGLE.[35:1]#, QTRDYMASK      =@10000#    00081200 T  000010
                                       ,INTFREE         = TOGLE.[34:1]#, FREEMASK       =@20000#    00081300 T  000010
                                       ,SPOFDNULLOG   = TOGLE.[33:1]#                               00081400 T  000010
                                       ,REMOTELOGFREE = TOGLE.[32:1]#, REMOTELOGMASK = @100000#     00081500 T  000010
                                       ,EGGSELECTSTOPPED = TOGLE.[31:1]#                            00081600 T  000010
                                       ,STARTOG         = TOGLE.[30:1]#                             00081610 T  000010
                                       ,NINETEENNOTREADING=TOGLE.[29:1]#, NINETEENMASK=@1000000#    00081620 T  000010
```

```
                ,SMWSTOPPED=TOGLE.[28:1]#, SMWSTOPPEDMASK=@2000000#                  00081630 T  0000:0
                ,DCWAITING=TOGLE.[27:1]#                                            00081640 T  0000:0
                ,DCQPTSTOPPED=TOGLE.[26:1]#                                         00081650 T  0000:0
                ,NQUPTSTOPPED=TOGLE.[25:1]#                                         00081660 T  0000:0
                ,MCPFREE=TOGLE.[24:1]#, MCPMASK=@40000000#                          00081670 T  0000:0
                        % USED TO PROTECT DISK SEGMENT ZERO                         00081675 T  0000:0
                 ,SCRATCHDIRECTORYREADY = TOGLE.[23:1]#,                            00081680 T  0000:0
                                SCRATCHDIRECTORYMASK = @100000000#                  00081690 T  0000:0
                        % USED TO PROTECT THE SCRATCHDIRECTORY                      00081695 T  0000:0
                ,FINDINGADDRESS=TOGLE.[22:1]#                                       00081700 T  0000:0
                        % SET TRUE WHENEVER THE INDEPENDENT RUNNING ROUTINE         00081705 T  0000:0
                        % "FINDFREEADDRESS" IS STARTED SO THAT ONLY ONE COPY        00081706 T  0000:0
                        % WILL BE RUN AT ONE TIME.                                 00081707 T  0000:0
                 ,CDFREE=TOGLE.[21:1]#,CDMASK=@400000000#                           00081710 T  0000:0
                        % SET TRUE WHEN CONTROL DECK QUEUE IS FREE                  00081711 T  0000:0
                ,NOMEM=TOGLE.[15:6]# %GETSPACES HANGING                             00081950 T  0000:0
               ,BREAKTOG=TOGLE.[14:1]# %BREAKOUT TOG                                00081960 T  0000:0
               ,BREAKMASK=@100000000000#                                            00081970 T  0000:0
                 ,SEPTICTANKING = TOGLE.[13:1]#                                     00081972 T  0000:0
                 ,DIRECTORYTOG = TOGLE.[12:1]#                                      00081974 T  0000:0
                 ,DIRECTORYMASK = @400000000000#                                    00081976 T  0000:0
                 ,NOMEMTOG      = TOGLE.[11:1]#  % ON IF NOMEM SINCE LAST NSECOND   00081980 T  0000:0
                 ,MEMNO         = [9:3]#         % 9:2 = COUNTER FOR NSECOND       00081982 T  0000:0
                 ;                                                                  00081999 T  0000:0
               STREAM PROCEDURE MOVE(N)"WORDS FROM"(HERE)"TO"(THERE);%               00082000 T  0000:0
PRT(223) = MOVE
                        VALUE N,HERE,THERE;%                                        00083000 T  0000:0
                 COMMENT     WILL MOVE 0 TO 4095 WORDS;%                            00084000 T  0000:0
                       BEGIN LOCAL NDIV64;%                                         00085000 T  0000:0
                                                          START OF SAVE SEGMENT; BASE ADDRESS = 00059
                     SI←LOC N; DI←LOC NDIV64; SI←SI+6; DI←DI+7; DS←1 CHR;           00086000 T  0000:0
                     SI←HERE; DI←THERE;%                                            00087000 T  0001:1
                     NDIV64(DS←32 WDS; DS←32 WDS); DS←N WDS;%                       00088000 T  0001:3
               END MOVE;%                                                           00089000 T  0003:2
                                                                                                00085000
                                                                                      SIZE= 0004 WORDS
```

```
                PROCEDURE STOPM(B); VALUE B; BOOLEAN B; FORWARD;                                    00089100 T  000:0
PRT(224) = STOPM                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00002
                LABEL DIFFCOM;
                SAVE PROCEDURE FORGETSPACE(LOC);%                                                   00089200 T  000:0
                                                                                                    00090000 T  000:0
PRT(225) = FORGETSPACE                                                                              START OF SAVE SEGMENT; BASE ADDRESS = 00063
                                    VALUE LOC;%                                                     00091000 T  000:0
                                    REAL LOC;%                                                      00092000 T  000:0
                FORWARD;%                                                                           00093000 T  000:0
                 ARRAY BED[*];                                          % 4MIXMAX+4              00094000 T  000:0
PRT(226) = BED
                        COMMENT ENTRIES IN THE BED HAVE TWO WORDS,%                                 00095000 T  000:0
                             THE FIRST WORD HAS THE FOLLOWING FORMAT;%                              00096000 T  000:0
                                  0- 2 = 5%                                                         00097000 T  000:0
                                  3- 7 = MIXINDEX%                                                  00098000 T  000:0
                                  8-17 = 0%                                                         00099000 T  000:0
                                 18-32 = F REGISTER SETTING%                                        00100000 T  000:0
                                 33-47 = ADDRESS OF WORD TO BE TESTED.%                             00101000 T  000:0
                             THE SECOND WORD IS A MASK IF BIT 0 IS OFF.%                            00102000 T  000:0
                             THE SECOND WORD IS AN ACCIDENTAL ENTRY DESCRIPTOR IF BIT 0             00103000 T  000:0
                             IS ON;%                                                                00104000 T  000:0
                COMMENT P1MIX,P2MIX NOW DECLARED AT 00021700;                                       00105000 T  000:0
                        COMMENT P1MIX IS THE MIX INDEX FOR THE JOB BEING CURRENTLY%                 00106000 T  000:0
                             PROCESSED.  P1MIX = 0 MEANS NO JOB IS CURRENTLY BEING%                 00107000 T  000:0
                             PROCESSED.  P2MIX IS THE MIX INDEX FOR THE JOB BEING%                  00108000 T  000:0
                             CURRENTLY PROCESSED ON PROCESSOR 2.  IF PROCESSOR IS IDLE              00109000 T  000:0
                             THEN P2MIX = 0.  IF THERE IS NO PROCESSOR 2 THEN P2MIX=-1;             00110000 T  000:0
                REAL DATE=@167;                                                                     00111000 T  000:0
PRT(167) = DATE
                        COMMENT DATE CONTAINS TODAYS DATE;%                                         00112000 T  000:0
                REAL XCLOCK=@171;                                                                   00114000 T  000:0
PRT(171) = XCLOCK
                REAL READY=@172;                                                                    00121000 T  000:0
PRT(172) = READY
                        COMMENT READY CONTAINS THE CONTENTS OF THE READY REGISTER ON%               00122000 T  000:0
                             THE LAST READ;%                                                        00123000 T  000:0
                        COMMENT STATUSBIT IS FALSE IF THE STATUS ROUTINE IS RUNNING AND             00125000 T  000:0
                             TRUE OTHERWISE.  THIS PREVENTS TWO COPIES OF STATUS FROM%              00126000 T  000:0
                             RUNNING TOGETHER;%                                                     00127000 T  000:0
                    ARRAY PRT[*,*];%                                                                00128000 T  000:0
PRT(227) = PRT
                        COMMENT PRT[I,*] CONTAINS A DATA DESCRIPTOR WITH PROPER SIZE%               00129000 T  000:0
                             FIELD POINTING AT PRT FOR JOB WITH MIX INDEX = I;%                     00130000 T  000:0
                 ARRAY PRTROW=PRT[*];                                           % MIXMAX+1%          00131000 T  000:0
PRT(227) = PRTROW
                        COMMENT PRTROW IS DOPE VECTORS FOR PRT;%                                    00132000 T  000:0
                        ARRAY  JAR[*,*];%                                                           00133000 T  000:0
PRT(230) = JAR
                        % JAR HOLDS INFO OF JOBS IN PROCESS (SEE DEFINES AT 20544000)              00134000 T  000:0
                 DEFINE                                                                             00134010 T  000:0
                   LIBMAINCODE=1#, LDCNTRLCODE=3#, PRNPBTCODE=5#,                                   00134020 T  000:0
                   SYSJOBF=[6:3]#, SSYSJOBF=[5:3]#;                                                 00134030 T  000:0
                   % SEE 20556700 RE SYSJOBF (SYSTEM JOB FIELD)                                     00134040 T  000:0
                   % SEE 20515000 RE SSYSJOBF (SHEET SYSTEM JOB FIELD)                              00134050 T  000:0
                 $ SET OMIT = NOT(WORKSET)                                                          00134100 T  000:0
                ARRAY STQUE[*]; % QUEUE FOR "STOPPED" JOBS, 16 LONG                                 00134110 T  000:0
```

```
PRT(231) = STQUE
                DEFINE STQUEMAX = 15#;                                                          00134115 T  0000:0
                ARRAY OLAYTIME[*]; % USED FOR STORAGE OF OLAY OVERHEAD TIME                     00134120 T  0000:0
PRT(232) = OLAYTIME
                PROCEDURE WORKSET(N); VALUE N; REAL N; FORWARD;                                 00134125 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(233) = WORKSET
                ARRAY WKSETDATA[*];                                                             00134130 T  0000:0
PRT(234) = WKSETDATA
                % ARRAY USED FOR STORAGE OF WORKSET INFORMATION                                 00134140 T  0000:0
                DEFINE  WKSETCLOCK      =  WKSETDATA[0]#,                                       00134150 T  0000:0
                                           % TIME AT WHICH WORKSET ROUTINE HAS STARTED           00134160 T  0000:0
                                           % TO RUN                                            00134170 T  0000:0
                        WKSETRUNNING    =  WKSETDATA[1].[47:1]#,                                00134180 T  0000:0
                                           % TOGGLE TO INDICATE THAT WORKSET IS RUNNING         00134190 T  0000:0
                        WKSETNOSELECT   =  WKSETDATA[1].[46:1]#,                                00134200 T  0000:0
                                           % TOGGLE TO PREVENT SELECTRUN FROM PLACING           00134210 T  0000:0
                                           % ADDITIONAL JOBS IN THE MIX                         00134220 T  0000:0
                        WKSETMONITOR    =  WKSETDATA[1].[45:1]#,                                00134230 T  0000:0
                                           % TOGGLE USED TO "MONITOR" WORKSETDATA               00134240 T  0000:0
                        WKSETMAXOLAY    =  WKSETDATA[2]#,                                       00134250 T  0000:0
                                           % MAX. FRACTION OF PROCESS TIME TO COMPUTE           00134260 T  0000:0
                                           % MAXIMUM ALLOWABLE OLAY TIME                        00134270 T  0000:0
                        WKSETOLERANCE   =  WKSETDATA[3]#,                                       00134280 T  0000:0
                                           % FRACTION USED TO COMPARE JOB STATISTICS            00134290 T  0000:0
                                           % (ALLOWABLE VARIANCE TO COMPUTE MAX.VALUES)         00134300 T  0000:0
                        WKSETINSTRUCT   =  WKSETDATA[4]#,                                       00134310 T  0000:0
                                           % INSTRUCTIONS FOR COMPARING JOB STATISTICS          00134320 T  0000:0
                                           % FRACTION OF TOTAL SYSTEM CORE WHICH MUST           00134330 T  0000:0
                                           % BE KEPT AVAILABLE                                  00134340 T  0000:0
                        WKSETCYCLETIME  =  WKSETDATA[5]#,                                       00134350 T  0000:0
                                           % CYCLE TIME (64THS OF A SECOND) FOR WHICH           00134360 T  0000:0
                                           % THE WORKSET ROUTINE IS RUN, QUEUED AT              00134370 T  0000:0
                                           % "TIMER" IN THE OUTER BLOCK                         00134380 T  0000:0
                        WKSETSTOPJOBS   =  WKSETDATA[6]#,                                       00134390 T  0000:0
                                           % BIT INDEX (TWO(MIX)) FOR JOBS WHICH HAVE           00134400 T  0000:0
                                           % BEEN "STOPED" BY THE WORKSET ROUTINE               00134410 T  0000:0
                        STFIRST         =  WKSETDATA[7].[CF]#,                                  00134420 T  0000:0
                                           % INDEX TO FIRST ENTRY IN THE "STQUE"                00134430 T  0000:0
                        STNEXT          =  WKSETDATA[7].[FF]#,                                  00134440 T  0000:0
                                           % INDEX TO NEXT AVAILABLE SLOT IN "STQUE"            00134450 T  0000:0
                        WKSETSWITCHTIME=   WKSETDATA[8]#,                                       00134460 T  0000:0
                                           % TIME OF LAST "BOJ" OR "EOJ" EVENT                  00134470 T  0000:0
                        WKSETDATASIZE   =  9#; % SIZE OF THE WKSETDATA ARRAY                    00134480 T  0000:0
                $ POP OMIT % WORKSET                                                            00134490 T  0000:0
                ARRAY INTRNSC[*]; REAL INTSIZE;%  RE-ENTRANT INTRINSICS ON USER DISK            00135000 T  0000:0
PRT(235) = INTRNSC
PRT(236) = INTSIZE
                   ARRAY INTABLE[*,*], INTABLEROW=INTABLE[*];%                                  00135100 T  0000:0
PRT(237) = INTABLE
PRT(237) = INTABLEROW
                $ SET OMIT = NOT(AUXMEM)                                                        00135199 T  0000:0
                ARRAY SHEET[*];                                    %  5%                        00136000 T  0000:0
PRT(240) = SHEET
                ARRAY JARROW=JAR[*];                               %  MIXMAX+1%                 00138000 T  0000:0
PRT(230) = JARROW
                DEFINE TABCNT[TABCNT1] = JARROW[TABCNT1].[FF]#;                                 00138100 T  0000:0
```

```
                    COMMENT TABCNT IS THE NUMBER OF PROCESSES WHICH HAVE CHECKED      00138110 T  0000:0
                        JARROW AND ARE CURRENTLY ACCESSING MIX TABLES. IT ASSURES     00138120 T  0000:0
                        THAT THE TABLES DONT VANISH BENEATH THOSE PROCESSES;          00138130 T  0000:0
                    COMMENT ENTRIES IN THE SLATE HAVE TWO WORDS.  EACH ENTRY%         00140000 T  0000:0
                        DESCRIBES AN INDEPENDENT ROUTINE WHICH NEEDS TO BE STARTED    00141000 T  0000:0
                        RUNNING.  NOTHING TO DO STARTS THESE ROUTINES.%               00142000 T  0000:0
                        THE FIRST WORD OF AN ENTRY IS A PARAMETER TO THE ROUTINE.     00143000 T  0000:0
                        THE SECOND WORD OF AN ENTRY IS THE PRT ADDRESS OF THE%        00144000 T  0000:0
                        ROUTINE.%                                                     00145000 T  0000:0
                        NSLATE AND LSLATE ARE POINTERS TO THE SLATE.%                 00146000 T  0000:0
                        NSLATE POINTS AT LAST ENTRY WHICH WAS STARTED.%               00147000 T  0000:0
                        LSLATE POINTS AT LAST ENTRY PLACED IN THE SLATE;%             00148000 T  0000:0
                REAL JOBNUM;%                                                         00149000 T  0000:0
PRT(241) = JOBNUM
                    COMMENT JOBNUM POINTS AT LAST ENTRY IN BED;%                      00150000 T  0000:0
                    COMMENT STACKUSE IS TRUE IF THE INDEPEDENT STACK IS NOT IN USE,   00152000 T  0000:0
                        OTHERWISE FALSE;%                                             00153000 T  0000:0
                BOOLEAN NOPROCESSTOG;%                                                00154000 T  0000:0
PRT(242) = NOPROCESSTOG
                    COMMENT   NOPROCESSTOG IS TRUE IF NORMAL STATE PROCESSING IS%     00155000 T  0000:0
                        ALLOWED. OTHERWISE IT IS FALSE.  IT IS USED BY OVERLAY AND    00156000 T  0000:0
                        OTHERS TO PREVENT CONFUSION;%                                 00157000 T  0000:0
            REAL SOFTI; % NUMBER OF JOBS IN MIX HAVING SOFTWARE INTERRUPTS DECLARED   00157100 T  0000:0
PRT(243) = SOFTI
            REAL WITCHINGHOUR,WORDOFEASE;                                             00157500 T  0000:0
PRT(244) = WITCHINGHOUR
PRT(245) = WORDOFEASE
                    COMMENT THESE USED TO BE CONSTANTS IN THE OUTER BLOCK BUT WERE    00157600 T  0000:0
                        MOVED HERE SO EVERYONE COULD USE THEM. THEY CONTAIN:          00157700 T  0000:0
                            WITCHINGHOUR   5184000                                    00157800 T  0000:0
                            WORDOFEASE     @2525252525252525                          00157900 T  0000:0
                        ;                                                             00158000 T  0000:0
                DEFINE NDX=3#;     % NUMBER OF ENTRIES PER JOB IN NFO ARRAY           00158100 T  0000:0
                ARRAY NFO[*];                                          %MIXMAX×NDX    00158200 T  0000:0
PRT(246) = NFO
                   COMMENT NFO CONTAINS THE FOLLOWING FOR EACH ACTIVE MIX INDEX;      00158300 T  0000:0
                   %     NFO[(MIX-1)×NDX]         = FILE PARAMETER BLOCK DATA DESCRIPTOR 00158400 T  0000:0
                   %     NFO[(MIX-1)×NDX+1]       = SEGMENT DICTIONARY NAME DESCRIPTOR   00158500 T  0000:0
                   %     NFO[(MIX-1)×NDX+2].[CF] = LOCATION OF BOTTOM OF STACK (B-WORD) 00158600 T  0000:0
                   %     NFO[(MIX-1)×NDX+2].[FF] = ESTIMATED CORE REQUIREMENTS         00158700 T  0000:0
                   %     NFO[(MIX-1)×NDX+2].[1:17] = CLOCK TIME AT BOJ                 00158800 T  0000:0
                ARRAY !STACK[*];                                       %  128%        00159000 T  0000:0
PRT(247) = !STACK
                ARRAY PROCTIME[*];                                     %  MIXMAX+1%   00161000 T  0000:0
PRT(250) = PROCTIME
                    COMMENT PROCTIME[I] CONTAINS PROCESSOR TIME FOR JOB WITH%         00162000 T  0000:0
                        MIX INDEX = I;%                                               00163000 T  0000:0
                ARRAY !OTIME[*];                                       %  MIXMAX+1%   00164000 T  0000:0
PRT(251) = !OTIME
                    COMMENT IOTIME[I] CONTAINS I-O TIME FOR JOB WITH MIX INDEX =I;    00165000 T  0000:0
                $ SET OMIT = NOT(NEWLOGGING)                                          00165009 T  0000:0
               DEFINE EUIOHOLDER=DIRECTORYTOP-5#,                                     00165800 T  0000:0
                      EUTAPER=.98#,                                                   00165810 T  0000:0
                      DISKAVAILTABLEMAX=130#;                                         00165820 T  0000:0
               INTEGER NEUP;  ARRAY EUIO[*];  ARRAY PEUIO[*] ;                        00166000 T  0000:0
PRT(252) = NEUP
PRT(253) = EUIO
```

```
PRT(254) = PFUIO
                $ SET OMIT = NOT(SHAREDISK )
                $ SET OMIT = SHAREDISK
               ARRAY AVTABLE[*] ;
PRT(255) = AVTABLE
                $ POP OMIT
                     COMMENT NEUP.[CF] CONTAINS THE NUMBER OF EUS ON DKA.
                             NEUP.NFUF CONTAINS THE TOTAL NUMBER OF EUS ON THE SYSTEM.
                             EUIO AND PEUIO CONTAIN THE I-O TIME USED BY A GIVEN EU.
                             THIS INFORMATION IS USED BY GETUSERDISK IN AN ATTEMPT TO
                             MINIMIZE  EU CONFLICT;
                   DEFINE MIXF = [3:5]#;%
                ARRAY CHANIO[*];
PRT(256) = CHANIO
                ARRAY CHANNEL[*];                                        %  5%
PRT(257) = CHANNEL
                  COMMENT CHANNEL[I] CONTAINS LOGICAL UNIT OF LAST DESCRIPTOR%
                       SENT OUT ON CHANNEL I;%
                ARRAY FINALQUE[*];                                       %  32%
PRT(260) = FINALQUE
                ARRAY LOCATQUE[*];                                       %  32%
PRT(261) = LOCATQUE
                  COMMENT IOQUE,FINALQUE, AND LOCATQUE TOGETHER WITH UNIT FORM%
                       THE I-O QUEUE.  AN I-O REQUEST FOR LOGICAL UNIT U REQUIRES
                       THREE WORDS OF SPACE IN THE I-O QUEUE.  IF THE REQUEST%
                       OCCUPIES POSITION S IN THE I-O QUEUE, THEN IOQUE[S] )%
                       I-O DESCRIPTOR FOR THIS REQUEST, FINAL[S] = I-O DESCRIPTOR
                       SKELETON TO BE USED AT I-O COMPLETE TIME TO REBUILD%
                       I-O DESCRIPTOR, LOCATQUE[S] = LOCATION OF I-O DESCRIPTOR%
                       AT TIME OF REQUEST.  LOCATQUE[S] CONTAINS SOME ADDITIONAL
                       INFORMATION.  IN PARTICULAR;%
                            0- 2 = 5%
                            3- 7 = MIX INDEX OF REQUESTER%
                               8 = I/O IS READ LOCK WHICH HAD ERROR (SHAREDISK).
                               9 = OLAY I/O (IOFINISH PLACES RESULT ON ERROR).
                              10 = NO MEM MESSAGE.
                              11 = ERROR RECOVERY IN PROCESS ON THIS I-O
                            12-17 = LOGICAL UNIT NUMBER%
                            18-32 = INDEX OF NEXT REQUEST TO BE DONE ON THIS UNIT
                                    OR @77777 IF NO NEXT REQUEST%
                            33-47 = ORIGINAL LOCATION OF I-O DESCRIPTOR.%
                       UNIT[U] CONTAINS INFORMATION ABOUT LOGICAL UNIT U.%
                            1- 4 = TYPE OF I/O DEVICE%
                            5-12 = ERROR FIELD OF LAST I/O DONE ON THIS UNIT%
                              13 = UNIT NOT READY BIT%
                              14 = ERROR BIT (ON IF ERROR)%
                              15 = WAIT BIT (ON IF UNIT IS WAITING FOR A CHANNEL
                            16-17 = PROCESS BITS (USUALLY BOTH ON IF UNIT IS IN%
                                    PROCESS OR BOTH OFF.  WITH PRINTERS THE%
                                    I-O FINISH SETS OFF 16 AND THE PRINTER%
                                    FINISH SETS OFF 17)%
                            18-32 = INDEX OF FIRST I-O REQUEST FOR WHICH SERVICE
                                    IS NOT COMPLETE%
                            33-47 = INDEX OF LAST UNSERVICED I-O REQUEST.%
                       THE SPACES NOT USED IN THE I-O QUEUE ARE LINKED TOGETHER%
                       THROUGH IOQUE.  THE FIRST AVAILABLE IS IN IOQUEAVAIL;%
REAL IOQUESLOTS,IOQUEAVAIL;
```

```
00166002 T  0000:0
00166005 T  0000:0
00166006 T  0000:0
00166007 T  0000:0
00166010 T  0000:0
00166025 T  0000:0
00166030 T  0000:0
00166040 T  0000:0
00166050 T  0000:0
00168000 T  0000:0
00169000 T  0000:0
00170000 T  0000:0
00171000 T  0000:0
00172000 T  0000:0
00173000 T  0000:0
00174000 T  0000:0
00175000 T  0000:0
00176000 T  0000:0
00177000 T  0000:0
00178000 T  0000:0
00179000 T  0000:0
00180000 T  0000:0
00181000 T  0000:0
00182000 T  0000:0
00183000 T  0000:0
00184000 T  0000:0
00185000 T  0000:0
00185100 T  0000:0
00185500 T  0000:0
00186000 T  0000:0
00186100 T  0000:0
00187000 T  0000:0
00188000 T  0000:0
00189000 T  0000:0
00190000 T  0000:0
00191000 T  0000:0
00192000 T  0000:0
00193000 T  0000:0
00194000 T  0000:0
00195000 T  0000:0
00196000 T  0000:0
00197000 T  0000:0
00198000 T  0000:0
00199000 T  0000:0
00200000 T  0000:0
00201000 T  0000:0
00202000 T  0000:0
00203000 T  0000:0
00204000 T  0000:0
00205000 T  0000:0
00205500 T  0000:0
```

```
PRT(262) = TOQUESLOTS
PRT(263) = TOQUEAVAIL
                    ARRAY TOQUE[*];                                                  00206000 T  0000:0
PRT(264) = TOQUE
                    DEFINE RETURNIOSPACE(RETURNIOSPACE1) =                           00206500 T  0000:0
                         BEGIN IOQUESLOTS:=IOQUESLOTS+1;                             00207000 T  0000:0
                              IOQUE[RETURNIOSPACE1]:=IOQUEAVAIL;                     00207500 T  0000:0
                              IOQUEAVAIL:=RETURNIOSPACE1;                            00208000 T  0000:0
                         END#;                                                       00208500 T  0000:0
               ARRAY UNIT[*];                                                        00209000 T  0000:0
PRT(265) = UNIT
                    COMMENT UNIT NOW FILLED IN INITIALIZE;                           00210000 T  0000:0
               ARRAY TINU[*];                                                        00241700 T  0000:0
PRT(266) = TINU
                    COMMENT TINU NOW FILLED IN INITIALIZE;                           00241800 T  0000:0
               ARRAY WAITQUE[*];                                    %  8%           00278000 T  0000:0
PRT(267) = WAITQUE
              REAL NEXTWAIT,FIRSTWAIT;%                                              00279000 T  0000:0
PRT(270) = NEXTWAIT
PRT(271) = FIRSTWAIT
                    COMMENT WAITQUE IS A QUEUE OF UNITS FOR WHICH THERE ARE%         00280000 T  0000:0
                         REQUESTS BUT NO CHANNEL IS AVAILABLE.  NEXTWAIT AND%        00281000 T  0000:0
                         FIRSTWAIT ARE POINTERS AT THE WAITQUE.  NEXTWAIT IS THE%    00282000 T  0000:0
                         NEXT AVAILABLE SLOT IN WAITQUE AND FIRSTWAIT POINTS AT%     00283000 T  0000:0
                         NEXT UNIT TO BE USED WHEN A CHANNEL IS AVAILABLE;%          00284000 T  0000:0
               ARRAY LABELTABLE[*];                                  %  32%         00285000 T  0000:0
PRT(272) = LABELTABLE
               ARRAY MULTITABLE[*];                                  %  32%         00286000 T  0000:0
PRT(273) = MULTITABLE
               ARRAY RDCTABLE[*];                                    %  32%         00287000 T  0000:0
PRT(274) = RDCTABLE
               ARRAY PRNTABLE[*];%                                                   00288000 T  0000:0
PRT(275) = PRNTABLE
               ARRAY REPLY[*];%                                                      00289000 T  0000:0
PRT(276) = REPLY
              COMMENT LABELTABLE, MULTITABLE, AND RDCTABLE CONTAIN LABEL INFORMATION%  00290000 T  0000:0
                    BY LOGICAL UNIT NUMBER AS FOLLOWS:%                              00291000 T  0000:0
                    LABELTABLE[I] CONTAINS THE FILE ID FOR LOGICAL UNIT I.%          00292000 T  0000:0
                    MULTITABLE[I] CONTAINS THE CORRESPONDING MULTI-FILE ID.%         00293000 T  0000:0
                    RDCTABLE[I] CONTAINS THE CORRESPONDING REEL NUMBER (IN [14:10]),  00294000 T  0000:0
                    CREATION DATE (IN [24:17]), AND CYCLE (IN [41:7]);%              00295000 T  0000:0
               $ SET OMIT = NOT(SHAREDISK)                                           00295999 T  0000:0
              REAL OPTION;%                                                          00297000 T  0000:0
PRT(277) = OPTION
              REAL ILL,INQCT;                                                        00299000 T  0000:0
PRT(300) = ILL
PRT(301) = INQCT
              REAL PINGO;                                                            00301000 T  0000:0
PRT(302) = PINGO
               REAL READQ,RRNCOUNT;  DEFINE PUT=SET#;                                00301100 T  0000:0
PRT(303) = READQ
PRT(304) = RRNCOUNT
               $ SET OMIT = NOT(DATACOM )                                            00301200 T  0000:0
               ARRAY TRANSACTION[*];                                 %  32%         00304000 T  0000:0
PRT(305) = TRANSACTION
               DEFINE ETRLNG = 5#;    % LENGTH OF ENTRY IN FILE BLOCK%               00305000 T  0000:0
              SAVE REAL PROCEDURE TWO(N); VALUE N; INTEGER N;                        00306000 T  0000:0
```

```
PRT(306) = TWO

STACK(F+1) = T
```

```
BEGIN REAL T=+1;

     STREAM(N:=N:=47-N,T:=[T]);
     BEGIN SKIP N DB; DS:=SET; END;

END TWO;%
```

```
START OF SAVE SEGMENT; BASE ADDRESS = 00063

                                00307000 T  0000:0

                                00308000 T  0000:0
                                00308500 T  0002:1
                                                 00308500
                                00309000 T  0003:1
                                                 00307000
                                      SIZE= 0004 WORDS
```

```
                    REAL SYLLABLE;%                                                                    00310000 T  0000:0
PRT(307) = SYLLABLE
                 $ SET OMIT = NOT(SHAREDISK)                                                           00310099 T  0000:0
                 $ SET OMIT = SHAREDISK                                                                00310199 T  0000:0
                DEFINE SYSNO=0#, SYSMAX=1#;                                                            00310200 T  0000:0
                 $ POP OMIT                                                                            00310201 T  0000:0
                        COMMENT ANALYSIS PLACES THE SYLLABLE THAT CAUSED THE INTERRUPT                 00311000 T  0000:0
                             IN SYLLABLE.  THIS IS USED BY PRESENCE BIT, FLAG BIT, AND                 00312000 T  0000:0
                             VARIOUS ERRORS;%                                                          00313000 T  0000:0
                PROCEDURE FORGETUSERDISK(A,L);VALUE A,L;REAL A,L;FORWARD;%                             00316000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(310) = FORGETUSERDISK
                REAL PROCEDURE PETUSERDISK(N,T);VALUE N,T;REAL N,T;FORWARD ;                           00316100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(311) = PETUSERDISK
                 $ SET OMIT = NOT DEBUGGING                                                            00316999 T  0000:0
                 $ SET OMIT = NOT DEBUGGING                                                            00330999 T  0000:0
                 ARRAY DALOC[*,*], DALOCROW=DALOC[*];                                                  00333000 T  0000:0
PRT(312) = DALOC
PRT(312) = DALOCROW
                 $ SET OMIT = NOT(BREAKOUT)                                                            00333099 T  0000:0
                 REAL OLAYMASK;%   FOR LOCKING OUT GETMOREOLAYDISK BY MIX INDEX                        00336000 T  0000:0
PRT(313) = OLAYMASK
                PROCEDURE USERDISKSPECIALCASE(Q,R,U,J);VALUE Q,J;REAL Q,R,J;                           00336100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(314) = USERDISKSPECIALCASE
                        ARRAY U[*]; FORWARD ;                                                          00336110 T  0000:0
                 DEFINE BASE=30268#,%                                                                  00338000 T  0000:0
                        CHUNKSIZE=500#;%                                                               00339000 T  0000:0
                 REAL LEFTOFF;    COMMENT POINTER TO CYCLE FOR OLAY;%                                  00341000 T  0000:0
PRT(315) = LEFTOFF
                 SAVE PROCEDURE DISKRTN(SEGNO, SIZE);                                                  00363000 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00067
PRT(316) = DISKRTN
                     VALUE     SEGNO, SIZE;                                                            00363100 T  0000:0
                     INTEGER   SEGNO, SIZE;                                                            00363200 T  0000:0
                          FORWARD;                                                                     00363300 T  0000:0
                PROCEDURE FORGETESPDISK(SEG);VALUE SEG;REAL SEG;FORWARD;                               00364000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(317) = FORGETESPDISK
                SAVE INTEGER PROCEDURE DISKSPACE(NWORDS,P1MIX,AUX);%                                   00365000 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00067
PRT(320) = DISKSPACE
                     VALUE NWORDS,P1MIX,AUX;                                                           00366000 T  0000:0
                     INTEGER NWORDS,P1MIX;REAL AUX;                                                    00367000 T  0000:0
                          FORWARD;%                                                                    00368000 T  0000:0
                 PROCEDURE STATUS;%                                                                    00369000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(321) = STATUS
                          FORWARD;%                                                                    00370000 T  0000:0
                PROCEDURE INTERRUPT(TYPE);VALUE TYPE;REAL TYPE; FORWARD;                               00370500 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(322) = INTERRUPT
                REAL PROCEDURE FINDOUTPUT(MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND);%                  00371000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(323) = FINDOUTPUT
                           VALUE MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND;%                            00372000 T  0000:0
```

```
                    REAL  MID,FID,TYPE,FORMS,REEL,CDATE,CYCLE,KIND; FORWARD;%          00373000 T  0000:0
               REAL PROCEDURE FINDINPUT(MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN); 00374000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(324) = FINDINPUT
                    VALUE MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN;%          00375000 T  0000:0
                    REAL  MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN; FORWARD;  00376000 T  0000:0
               PROCEDURE STARTIMING(FN,U); VALUE FN,U; REAL FN,U; FORWARD;%        00377000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(325) = STARTIMING
               PROCEDURE FILEOPEN(X,A); VALUE X,A; INTEGER X,A; FORWARD;
                                                                                    00379000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(326) = FILEOPEN
               SAVE PROCEDURE SAVEOPEN(A); VALUE A; REAL A;
                                                                                    00379100 T  0000:0
                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00067
PRT(327) = SAVEOPEN
                    BEGIN FILEOPEN(2,A) END;
                                                                                    00379200 T  0000:0
                                                                                          00379200
                                                                                  SIZE= 0002 WORDS
```

```
                PROCEDURE MIXPRINT(Q); VALUE Q; REAL Q; FORWARD;                                    00379400 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(330) = MIXPRINT
                % TYPES <JOB SPECIFIERS> FOR EACH ACTIVE MIX INDEX                                  00379500 T  0000:0
                PROCEDURE JOBMESS(MIX,Q,A,B,C,D);VALUE MIX,Q,A,B,C,D;                               00379600 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(331) = JOBMESS
                    REAL MIX,Q,A,B,C,D; FORWARD;                                                    00379700 T  0000:0
                PROCEDURE SETNOTINUSE(U,RWL); VALUE U,RWL; REAL U,RWL; FORWARD;                     00380000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(332) = SETNOTINUSE
                DEFINE STOPTIMING=STARTIMING#;                                                      00382000 T  0000:0
                PROCEDURE FILLBUFFERS(CURRENT,FINAL,COBOL,NR);                                      00385000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(333) = FILLBUFFERS
                    VALUE CURRENT,FINAL,COBOL,NR;  REAL CURRENT,FINAL,COBOL,NR;                     00385500 T  0000:0
                    FORWARD;                                                                        00386000 T  0000:0
                DEFINE GETBUFFERS=FILLBUFFERS#;                                                     00387000 T  0000:0
                 PROCEDURE REALFILECLOSE(A); VALUE A; REAL A; FORWARD;                              00389000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(334) = REALFILECLOSE
                 SAVE PROCEDURE FILECLOSE(A); VALUE A; REAL A;                                      00389100 T  0000:0
                                                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00069
PRT(335) = FILECLOSE
                        BEGIN REALFILECLOSE(A) END;                                                 00389200 T  0000:0
                                                                                                                  00389200
                                                                                                              SIZE= 0001 WORDS
```

```
                REAL PROCEDURE DISKADDRESS(MID,FID,FPB3,A,H,IO);                    % (SHM)          00390000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(336) = DISKADDRESS
                    VALUE MID,FID,FPB3,A,H,IO;                                    % (SHM)          00390100 T  0000:0
                    REAL  MID,FID,FPB3,A,IO;  ARRAY H[*];                         % (SHM)          00390200 T  0000:0
                      FORWARD;%                                                                    00391000 T  0000:0
                PROCEDURE BLASTQ(U); VALUE U; REAL U; FORWARD;%                                    00392000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(337) = BLASTQ
                REAL PROCEDURE FILEHEADER(MID,FID,NROWS,SIZE,BLEN,RLEN,S);%                        00393000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(340) = FILEHEADER
                                VALUE   MID,FID,NROWS,SIZE,BLEN,RLEN,S;%                          00394000 T  0000:0
                                REAL    MID,FID;%                                                  00395000 T  0000:0
                                INTEGER         NROWS,SIZE,BLEN,RLEN,S; FORWARD;%                  00396000 T  0000:0
                PROCEDURE PURGEIT(U); VALUE U; INTEGER U; FORWARD;%                                00397000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(341) = PURGEIT
                REAL ESPTAB,ESPCOUNT;                                                              00399000 T  0000:0
PRT(342) = ESPTAB
PRT(343) = ESPCOUNT
                REAL DIRDSK=@177;                                                                  00400500 T  0000:0
PRT(177) = DIRDSK
                REAL ESPDISKBOTTOM; % LOWEST ADDRESS OF ESPDISK                                    00401000 T  0000:0
PRT(344) = ESPDISKBOTTOM
                REAL ESPDISKTOP; % HIGHEST ADDRESS OF ESPDISK                                      00401100 T  0000:0
PRT(345) = ESPDISKTOP
                 REAL  MESSAGEHOLDER;%                                                             00402000 T  0000:0
PRT(346) = MESSAGEHOLDER
                    DEFINE USEDRA = OPTION.[47:1]#,%                                               00403000 T  0000:0
                           USEDRB = OPTION.[46:1]#,%                                               00404000 T  0000:0
                           BOJMESS     =OPTION.[45:1]#,%                                           00405000 T  0000:0
                           EOJMESS     =OPTION.[44:1]#,%                                           00406000 T  0000:0
                           OPNMESS     =OPTION.[43:1]#,%                                           00407000 T  0000:0
                           TERMGO    =OPTION.[42:1]#,%                                             00408000 T  0000:0
                                GIVEDATE = OPTION.[41:1]#,%                                        00409000 T  0000:0
                                GIVETIME = OPTION.[40:1]#,%                                        00410000 T  0000:0
                                SAMEBREAKTAPE=OPTION.[39:1]#,  % NOT CURRENTLY USED, 3/73          00411000 T  0000:0
                                AUTOPRINT=OPTION.[38:1]#,                                          00412000 T  0000:0
                                CLEARWRS=OPTION.[37:1]#,                                           00413000 T  0000:0
                                NOTIFYOP=OPTION.[36:1]#,%                                          00414000 T  0000:0
                                DISCONDC = OPTION.[36:1]#,                                         00414100 T  0000:0
                                COPNMESS=OPTION.[35:1]#,%                                          00415000 T  0000:0
                                CLOSEMESS=OPTION.[34:1]#,%                                         00416000 T  0000:0
                                ERRORMSG=OPTION.[33:1]#,                                           00416050 T  0000:0
                                RETMSG=OPTION.[32:1]#,                                             00416100 T  0000:0
                                LIBMSG=OPTION.[31:1]#,                                             00416200 T  0000:0
                                SCHEDMSG=OPTION.[30:1]#,                                           00416300 T  0000:0
                                SECMSG=OPTION.[29:1]#,                                             00416400 T  0000:0
                                DSKTOG=OPTION.[28:1]#,                                             00416500 T  0000:0
                                RELTOG=OPTION.[27:1]#,                                             00416520 T  0000:0
                                PBDREL=OPTION.[26:1]#,                                             00416550 T  0000:0
                                CHECKLINK = OPTION.[25:1]#,                                        00416560 T  0000:0
                                DISKMSG=OPTION.[24:1]#,                                            00416570 T  0000:0
                           LIBERR =(OPTION.[22:1] OR (SPOUTUNIT.[CF]=0))#, % FROM SP0%589-         00416590 C  0000:0
                                USEPBD=OPTION.[21:1]#,%                                    %DS     00416600 T  0000:0
                                SVPBT =OPTION.[20:1]#,%                                            00416610 T  0000:0
```

```
                        RSTOG=OPTION.[19:1]#,                                                00416620 T  0000:0
                        AUTOUNLD=OPTION.[18:1]#,                                             00416630 T  0000:0
                AUTORN = OPTION.[17:1]#,                                      %902-          00416710 P  0000:0
                        CODEOLAY=OPTION.[16:1]#,                                             00416730 T  0000:0
                        COREST=OPTION.[15:1]#,                                               00416740 T  0000:0
                        DATAOLAY=OPTION.[14:1]#,                                             00416750 T  0000:0
                        HALTSET=OPTION.[13:1]#,                                              00416751 T  0000:0
                        STOPTEST= OPTION.[8:1]#,                                             00416760 T  0000:0
                        PUNCHLCK=OPTION.[7:1]#,                                              00416770 T  0000:0
                        CDONLY=OPTION.[6:1]#,                                                00416780 T  0000:0
                        PKTONLY=OPTION.[5:1]#,                                               00416790 T  0000:0
                        SEPARATE=OPTION.[4:1]#,                                              00416800 T  0000:0
                    MOD3IOS=OPTION.[2:1]#,                                                   00416990 T  0000:0
                        AUTOMESS = OPTION.[1:1]#,                                            00416992 T  0000:0
                        AUTODS = OPTION.[1:1]#,  % ACTS FOR OPERATOR              %747-      00416995 C  0000:0
                    XXXXXX= OPTION.[0:0]#;%                                                  00417000 T  0000:0
            DEFINE BOJBIT = 45[18:42:6]#,                                                    00417010 T  0000:0
                   FOJBIT = 44[18:42:6]#,                                                    00417020 T  0000:0
                   OPNBIT = 43[18:42:6]#,                                                    00417030 T  0000:0
                   COPNBIT= 35[18:42:6]#,                                                    00417040 T  0000:0
                   CLOSEBIT=34[18:42:6]#,                                                    00417050 T  0000:0
                   ERRBIT = 33[18:42:6]#,                                                    00417052 T  0000:0
                   LIBBIT = 31[18:42:6]#,                                                    00417060 T  0000:0
                   SCHEDBIT=30[18:42:6]#,                                                    00417070 T  0000:0
                   SECBIT = 29[18:42:6]#,                                                    00417075 T  0000:0
                   RSBIT  = 19[18:42:6]#,                                                    00417080 T  0000:0
                   NEVERBIT=62[18:42:6]#,                                                    00417090 T  0000:0
                   ALWAYSBIT=63[18:42:6]#;                                                   00417100 T  0000:0
            REAL USERDISKBOTTOM;                                                             00418000 T  0000:0
PRT(347) = USERDISKBOTTOM
                % DISK ADDRESS OF USER DISK AVAILABLE TABLE                                  00418010 T  0000:0
            REAL DIRECTORYTOP;                                                               00418050 T  0000:0
PRT(350) = DIRECTORYTOP
                % DISK ADDRESS OF DIRECTORYTOP SEGMENT--STORED IN M[1]                       00418060 T  0000:0
                %BY MCP LOADER AND STORED IN MCP PRT(DIRECTORYTOP)                           00418070 T  0000:0
            REAL DISKBOTTOM;                                                                 00418100 T  0000:0
PRT(351) = DISKBOTTOM
                % DISK ADDRESS OF TOP OF BYPASS DIRECTORY, USED IN SCRAMBLE.                 00418200 T  0000:0
             $ SET OMIT = NOT(SHAREDISK)                                                     00418799 T  0000:0
             $ SET OMIT = SHAREDISK                                                          00418849 T  0000:0
            REAL HOLDER,NEXTSLOT,BYPASS;                                                     00418850 T  0000:0
PRT(352) = HOLDER
PRT(353) = NEXTSLOT
PRT(354) = BYPASS
             $ SET OMIT = NOT STATISTICS OR OMIT                                             00418859 T  0000:0
            DEFINE HOLDMAX = 30#;        % MAXIMUM NUMBER OF ENTRIES IN HOLDLIST          00418900 T  0000:0
            COMMENT THE HOLDLIST CONTAINS A ONE WORD ENTRY FOR EACH PROCESS                  00418910 T  0000:0
                    THAT IS WAITING TO USE A FILE THAT IS ALREADY IN USE.                    00418915 T  0000:0
                        HOLDLIST[I].[FF]=THE CORE ADDRESS OF THE WORD THAT THE               00418920 T  0000:0
                            WAITING PROCESS IS SLEEPING ON.                                  00418925 T  0000:0
                        HOLDLIST[I].[CF]=THE DISK ADDRESS OF THE FILE HEADER                 00418930 T  0000:0
                            THAT IS BEING WAITED FOR.                                        00418935 T  0000:0
                        HOLDLIST[I].[10:8]=MIX INDEX OF THE PROCESS THAT MADE THE            00418937 T  0000:0
                            ENTRY. (TSSMCP ONLY)                                             00418938 T  0000:0
                        HOLDLIST[I].[2:2]=THE SYSTEM NUMBER (SYSNO) OF THE SYSTEM            00418940 T  0000:0
                            THAT MADE THE ENTRY (SHAREDISK ONLY).                            00418945 T  0000:0
                        HOLDLIST[I].[1:1] IS SET BY A SYSTEM TO NOTIFY ANOTHER               00418950 T  0000:0
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                        SYSTEM TO AWAKEN THE PROCESS THAT MADE THE ENTRY.          00418955 T  0000:0
                        THE NSECOND ROUTINE EXAMINES THE HOLDLIST IN               00418960 T  0000:0
                        ORDER TO CHECK FOR THIS CONDITION (SHAREDISK ONLY).        00418965 T  0000:0
                   DIRECTORYSEARCH, NSECOND, AND CLEANOUT ARE THE PROCEDURES       00418970 T  0000:0
                   THAT MANIPULATE THE HOLDLIST.                                   00418975 T  0000:0
                                                                                   00418980 T  0000:0
                   THE WORDS ASSOCIATED WITH DIRECTORY HANDLING ARE:               00418985 T  0000:0
                        HOLDER.[CF] = DISK ADDRESS OF HOLDLIST.                    00418990 T  0000:0
                              .[FF] = NUMBER OF ENTRIES IN HOLDLIST.               00418995 T  0000:0
                        NEXTSLOT    = DISK ADDRESS OF FIRST HEADER IN QUEUE OF     00419000 T  0000:0
                                      EMPTY SPOTS IN DIRECTORY (NEXTSLOT QUEUE).   00419005 T  0000:0
                        BYPASS.[CF] = LOWEST ADDRESS OF THE BYPASS DIRECTORY.      00419010 T  0000:0
                              .[FF] = HIGHEST ADDRESS OF THE MAIN DIRECTORY.       00419015 T  0000:0
                   ON SHAREDISK, HOLDER, NEXTSLOT AND BYPASS ARE KEPT IN THE FIRST 00419020 T  0000:0
                   THREE WORDS OF THE DISK SEGMENT LOCATED AT DIRECTORYTOP+2. A    00419025 T  0000:0
                   READ LOCK MUST BE DONE BEFORE ACCESSING THE HOLDLIST OR NEXTSLOT00419030 T  0000:0
                   QUEUE OR EXPANDING EITHER THE MAIN OR BYPASS DIRECTORIES.       00419035 T  0000:0
              END COMMENT;                                                         00419040 T  0000:0
              INTEGER RESTARTING;   %PASSLEVEL CONTROL   (RS)                      00419100 T  0000:0
PRT(355) = RESTARTING
               $ SET OMIT = NOT(BREAKOUT)                                          00419104 T  0000:0
              DEFINE SCRAMBLE(SCRAMBLE1,SCRAMBLE2)=(=2x                            00419110 T  0000:0
                   ((SCRAMBLE1.[6:18]+SCRAMBLE1.[24:24]) MOD MODULUSxMODULUS+      00419120 T  0000:0
                    (SCRAMBLE2.[6:18]+SCRAMBLE2.[24:24]) MOD MODULUS) +            00419130 T  0000:0
                     DISKBOTTOM)#,                                                 00419140 T  0000:0
                    MODULUS=13#,  DIRMOD=169#;                                     00419150 T  0000:0
              COMMENT                                                              00419210 T  0000:0
                        THE RELATIONSHIP BETWEEN MODULUS AND DIRMOD IS:            00419220 T  0000:0
                        DIRMOD := MODULUS x MODULUS, WHERE MODULUS IS A LOW        00419230 T  0000:0
                        ODD PRIME. (THE RECOMMENDED VALUE OF MODULUS IS 13).       00419240 T  0000:0
                        FOR SYSTEMS WITH ONLY 4 MEMORY MODS, MODULUS MUST BE       00419250 T  0000:0
                        SET TO A SMALLER VALUE SO THAT DIRECTORYBUILDER WILL       00419260 T  0000:0
                        NOT GET A NO-MEM, MAKING IT IMPOSSIBLE TO HALT/LOAD.       00419270 T  0000:0
                        IT IS SUGGESTED THAT MODULUS BE SET TO 11, DIRMOD TO 121   00419280 T  0000:0
                        FOR A SYSTEM WITH 4 MODS. IT MAY BE NECESSARY TO SET IT    00419290 T  0000:0
                        SMALLER, DEPENDING UPON DISK CONFIGURATION;                00419300 T  0000:0
              ARRAY FS[*,*]; ARRAY FSROW=FS[*];                                    00419400 T  0000:0
PRT(356) = FS
PRT(356) = FSROW
               ARRAY USERDISK[*];                                                  00419900 T  0000:0
PRT(357) = USERDISK
               $ SET OMIT = NOT DEBUGGING                              %763-       00419999 P  0000:0
               $ SET OMIT = SHAREDISK                                              00421099 T  0000:0
              DEFINE LOCKDIRECTORY =                                               00421100 T  0000:0
                        BEGIN IF NOT DIRECTORYTOG THEN SLEEP([TOGLE],DIRECTORYMASK);00421200 T  0000:0
                              LOCKTOG(DIRECTORYMASK);                              00421300 T  0000:0
                          END#,                                                    00421400 T  0000:0
                   UNLOCKDIRECTORY =                                               00421500 T  0000:0
                          BEGIN                                                    00421600 T  0000:0
                              UNLOCKTOG(DIRECTORYMASK);                            00421700 T  0000:0
                          END#;                                                    00421800 T  0000:0
               $ POP OMIT                                                          00421801 T  0000:0
              BOOLEAN OKSEGZEROWRITE;                                  %204-       00422100 C  0000:0
PRT(360) = OKSEGZEROWRITE
               $ SET OMIT = NOT SHAREDISK                                          00422490 T  0000:0
              REAL LOGFREE,IOMASK,SAVEWORD;                                        00425000 T  0000:0
PRT(361) = LOGFREE
PRT(362) = IOMASK
```

```
PRT(363) = SAVEWORD
           REAL CORE;            %USED FOR SELECTION PURPOSES                                  00426000 T  0000:0
PRT(364) = CORE
               COMMENT
                  CORE.[4:14] = MULTIPROCESSING FACTOR (x100)                                  00426100 T  0000:0
                  CORE.[18:15] = SUM OF CORE ESTIMATES FOR ALL JOBS                            00426200 T  0000:0
                                 NOW ACTIVE IN THE MIX (DIV 64)                                00426300 T  0000:0
                  CORE.[33:15] = AMOUNT OF CORE MEMORY INITIALLY AVAILABLE FOR                 00426400 T  0000:0
                                 PROCESSING NORMAL STATE JOBS (DIV 64);                        00426500 T  0000:0
                PROCEDURE SELECTRUN(F); VALUE F; REAL F; FORWARD;                              00426600 T  0000:0
                                                                                               00426700 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(365) = SELECTRUN
           DEFINE SELECTION = INDEPENDENTRUNNER(P(,SELECTRUN),0,160)#;                         00426800 T  0000:0
           PROCEDURE CONTROLCARD(A);VALUE A;REAL A; FORWARD;%                                  00427000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(366) = CONTROLCARD
           REAL  PROCEDURE  DIRECTORYSEARCH(A,B,C);VALUE A,B,C;%                               00428000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(367) = DIRECTORYSEARCH
                     REAL  A,B,C; FORWARD;%                                                    00429000 T  0000:0
            DEFINE HEADERUNLOCK=HU#,                                                           00430000 T  0000:0
                   HU(HU1,HU2,HU3)=                                                            00430100 T  0000:0
                    P(MKS,HU3,HU1,HU2,9,DIRECTORYSEARC,DEL)#;                                  00430200 T  0000:0
           REAL DIRECTORYSEARC=DIRECTORYSEARCH;                                                00430225 T  0000:0
PRT(367) = DIRECTORYSEARC
             %%HEADERUNLOCK CAN BE USED TO WRITE IN THE DIRECTORY A CHANGED                    00430250 T  0000:0
             %%  HEADER, TURN OFF THE INTERLOCK BIT AND DO THE FORGETSPACE                     00430275 T  0000:0
             %%  IT MAY BE CALLED ONLY AFTER A DIRECTORYSEARCH(A,B,4)                          00430300 T  0000:0
             %% THE PARAMETERS PASSED MUST BE (A,B,DS);                                       00430400 T  0000:0
             %%  WHERE A,B ARE THE SAME AS PASSED TO THE DIRECTORYSEARCH                       00430500 T  0000:0
             %%   AND DS IS THE RESULT OF THAT DIRECTORYSEARCH                                 00430600 T  0000:0
           REAL OLDIDLETIME;                                                                   00430900 T  0000:0
PRT(370) = OLDIDLETIME
            PROCEDURE ARTN(A,N); VALUE A,N; ARRAY A[*]; INTEGER N; FORWARD;%                   00431000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(371) = ARTN
            SAVE PROCEDURE DISKIO(L,C,S,D); VALUE C,S,D; REAL L; INTEGER C,S,D;%               00432000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00070
PRT(372) = DISKIO
                     FORWARD;%                                                                 00433000 T  0000:0
           ARRAY MESSAGETABLE[*];                                                              00435000 T  0000:0
PRT(373) = MESSAGETABLE
           DEFINE MESSAGETABLESIZE = 5#; % NUMBER OF MESSAGETABLE ENTRIES                      00436000 T  0000:0
           DEFINE                                                                              00437000 T  0000:0
                 OPTIONSZ = (MESSAGETABLE[0],[8:10])#,                                         00438000 T  0000:0
                 TERMSGSZ = (MESSAGETABLE[1],[8:10])#,                                         00439000 T  0000:0
                 KEYMSGSZ = (MESSAGETABLE[2],[8:10])#,                                         00440000 T  0000:0
                 CCTABLSZ = (MESSAGETABLE[3],[8:10])#;                                         00441000 T  0000:0
            $ SET OMIT = PACKETS                                                               00449999 T  0000:0
            $ SET OMIT = NOT(PACKETS)                                                          00451499 T  0000:0
           DEFINE                                                                              00451500 T  0000:0
                SPOUT(SPOUT1)=SPOUTER(SPOUT1,0,1)#,                                            00451600 T  0000:0
                SPOUTIT(SPOUTIT1,SPOUTIT2)=SPOUTER(SPOUTIT1,0,SPOUTIT2)#;                      00451700 T  0000:0
           PROCEDURE SPOUTER(MESSAGE,UNITNO,TYPE);                                             00451800 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(374) = SPOUTER
                VALUE MESSAGE,UNITNO,TYPE;                                                     00451900 T  0000:0
```

```
                    REAL MESSAGE,UNITNO,TYPE;                                                    00452000 T  0000:0
                    FORWARD;                                                                     00452100 T  0000:0
               DEFINE                                                                            00452200 T  0000:0
                    FILEMESS=FMS#,                                                               00452300 T  0000:0
                    FMS(FMS1,FMS2,FMS3,FMS4,FMS5,FMS6,FMS7)=                                     00452400 T  0000:0
                    FILEMESSAGE(FMS1,FMS2,FMS3,FMS4,FMS5,FMS6,FMS7,1)#;                          00452500 T  0000:0
               PROCEDURE FILEMESSAGE(I,K,M,F,R,D,C,TYPE);                                        00452600 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(375) = FILEMESSAGE
                    VALUE I,K,M,F,R,D,C,TYPE;                                                    00452700 T  0000:0
                    REAL I,K,M,F,R,D,C,TYPE;                                                     00452800 T  0000:0
                    FORWARD;                                                                     00452900 T  0000:0
                $ POP OMIT                                                                       00452901 T  0000:0
               PROCEDURE LBMESS(FN,SN,I1,I2,E,UNITNO,X);                                         00454000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(376) = LBMESS
                    VALUE FN,SN,I1,I2,E,UNITNO,X;                                                00454100 T  0000:0
                    REAL  FN,SN,I1,I2,E,UNITNO,X;                                                00454200 T  0000:0
                    FORWARD;                                                                     00454300 T  0000:0
                PROCEDURE TERMINATE(MIX); VALUE MIX; REAL MIX; FORWARD;                          00463100 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(377) = TERMINATE
                SAVE PROCEDURE TERMINALMESSAGE(N); VALUE N; REAL N; FORWARD;                     00463200 T  0000:0
                                                                 START OF SAVE SEGMENT; BASE ADDRESS = 00070
PRT(400) = TERMINALMESSAGE
               BOOLEAN PROCEDURE SYSTEMFILE(A,B);VALUE A,B; REAL A,B; FORWARD;                   00463300 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(401) = SYSTEMFILE
               PROCEDURE ENTERSYSFILE(N); VALUE N; REAL N; FORWARD;                              00464000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(402) = ENTERSYSFILE
                PROCEDURE COM5;   FORWARD;%                                                      00469000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(403) = COM5
                $ SET OMIT = NOT(STATISTICS)                                                     00469099 T  0000:0
                PROCEDURE ASR;    FORWARD;%                                                      00474000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(404) = ASR
                PROCEDURE COM11;  FORWARD;%                                                      00475000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(405) = COM11
                PROCEDURE COM13;  FORWARD;%                                                      00477000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(406) = COM13
               PROCEDURE COMMUNICATE0; FORWARD;                                                  00478000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(407) = COMMUNICATE0
               PROCEDURE COMMUNICATE1; FORWARD;                                                  00478500 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(410) = COMMUNICATE1
                PROCEDURE LIBRARYZERO; FORWARD;                                                  00479500 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(411) = LIBRARYZERO
               PROCEDURE LIBRARYCOPY; FORWARD;                                                   00480000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(412) = LIBRARYCOPY
               PROCEDURE FORMTIME(W,T); VALUE W,T; REAL W,T; FORWARD;        %154=               00480010 C  0000:0
```

```
PRT(413) = FORMTIME
            $ SET OMIT = NOT(DUMP OR DEBUGGING)
           PROCEDURE DUMPCORE(B); VALUE B; REAL B; FORWARD;

PRT(414) = DUMPCORE
            $ POP OMIT
            PROCEDURE COM19;  FORWARD;%

PRT(415) = COM19
            PROCEDURE COM23; FORWARD;%

PRT(416) = COM23
           PROCEDURE INTRINSICTABLEBUILDER(FH);

PRT(417) = INTRINSICTABLEBUILDER
               VALUE FH; REAL FH; FORWARD;
           PROCEDURE MESSAGETABLEBUILDER; FORWARD;

PRT(420) = MESSAGETABLEBUILDER
            $ SET OMIT = AUXMEM
           DEFINE INVLDAUXIO = 11#,
                  LQOVFLOW   = 13#;
            $ SET OMIT = NOT (AUXMEM AND SHAREDISK)
           ARRAY PUNTER[*];
PRT(421) = PUNTER
           DEFINE PUNTSIZE = 11
            $ SET OMIT = NOT SHAREDISK
                       + 2                    % INVLD AUXMEM IO
            $ SET OMIT = NOT AUTODUMP
                       + 19                   % DUMP CARD
            $ POP OMIT OMIT OMIT
                       #;
            $ SET OMIT = NOT AUTODUMP
            $ SET OMIT = NOT (SHAREDISK FOR AUXMEM) OR OMIT
           DEFINE DUMPCRD = 13#,
                  DUMPADR = 26#;
            $ POP OMIT
            $ SET OMIT = (SHAREDISK OR NOT AUXMEM) OR OMIT
            $ SET OMIT = NOT SHAREDISK OR AUXMEM OR OMIT
              COMMENT   THIS IS THE CODE ON THE DUMP CARD (ALL NUMBERS ARE OCTAL):
                        :20: 20,20,NOP,NOP        TELLS ANALYZER ALL I/O RES ARE OK
                        :21: STD,5,BFW            BRANCH TO 23
                        :22: INI,0,LFU            TIMER - LOOP UNTIL INTERRUPTED
                        :23: 10,LOD,21,STD        SAVE M[8], RESTORED BY 2ND CARD
                        :24: 25,IIO,2,LBU         START I/O THEN WAIT AT TIMER
                        :25: 0140000007700035     I/O DESC FOR 77 SEG WRITE FROM 35
                        :26: 0140000047400157     I/O DESC FOR 74 SEG READ OF CODE
                        :27: OPDC 14,DIA 26,10,BFW     I/O 1 - PICK UP RES DESC,
                        :30: OPDC 15,DIA 26,6,BFW      I/O 2 - DIAL TO ERR FIELD,
                        :31: OPDC 16,DIA 26,2,BFW      I/O 3 - BRANCH INTO I/O 4
                        :32: OPDC 17,DIA 26,           I/O 4
                             DESC 24,CBD 7        BRANCH TO 24 FOR RETRY IF ERRORS
                        :33: DESC 37,BFW          GO TO 37 1ST TIME, SEE 41 FOR 2ND
                        :34: INI,0,LFU            DATACOM - LOOP UNTIL INTERRUPTED
                        :35: 0000000000000501     DISK ADDRESS FOR WRITE
                        :36: INI,0,LFU            FREEADDRESS - LOOP ON INTERRUPT
```

```
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00480099 T  0000:0
                    00480100 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00480101 T  0000:0
                    00483000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00487000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00489000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00490000 T  0000:0
                    00491000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00002

                    00642000 T  0000:0
                    00642100 T  0000:0
                    00642200 T  0000:0
                    00642300 T  0000:0
                    00643000 T  0000:0

                    00643100 T  0000:0
                    00643200 T  0000:0
                    00643320 T  0000:0
                    00643400 T  0000:0
                    00643500 T  0000:0
                    00643600 T  0000:0
                    00643700 T  0000:0
                    00644000 T  0000:0
                    00644100 T  0000:0
                    00644200 T  0000:0
                    00644300 T  0000:0
                    00644350 T  0000:0
                    00644400 T  0000:0
                    00644750 T  0000:0
                    00645000 T  0000:0
                    00645010 T  0000:0
                    00645020 T  0000:0
                    00645030 T  0000:0
                    00645040 T  0000:0
                    00645050 T  0000:0
                    00645060 T  0000:0
                    00645070 T  0000:0
                    00645080 T  0000:0
                    00645090 T  0000:0
                    00645100 T  0000:0
                    00645110 T  0000:0
                    00645120 T  0000:0
                    00645130 T  0000:0
                    00645140 T  0000:0
                    00645150 T  0000:0
                    00645160 T  0000:0
```

```
                        !37: 200,157,SND,240     STORE DISK ADR FOR READ, SET 240          00645170 T  0000:0
                                                 TO OPERAND FOR DESC AT 41                 00645180 T  0000:0
                        !40: STD,OPDC 26,25,STD  PUT I/O DESC INTO 25                      00645190 T  0000:0
                        !41: DESC 240,37,STD,NOP SET 37 FOR BRANCH TO 240 FROM 33          00645200 T  0000:0
                        !42: 16,LBU              BRANCH TO 24 TO START THE READ;           00645210 T  0000:0
                    $ POP OMIT                                                             00645900 T  0000:0
                    SAVE PROCEDURE RESULT;                                                 00646000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00070
PRT(422) = RESULT
                    BEGIN                                                                  00647000 T  0000:0
                        GO TO P([18]);           % TIMER IS A LOOP ON INTERRUPTS        00648000 T  0000:0
                    END;                                                                   00649000 T  0000:2
                                                                                                        00647000
                                                                                          SIZE= 0001 WORDS
```

```
                    SAVE PROCEDURE PUNT(I); VALUE I; REAL I;                                                    00650000 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00071
PRT(423) = PUNT
                         BEGIN REAL T=-3;                                                                       00650250 T  0000:0
STACK(F-3) = T
                              REAL TMB, RSLT=RESULT;                                                            00650500 T  0000:0
STACK(F+1) = TMB
PRT(422) = RSLT

                              LABEL HA,HB;                                                                      00650750 T  0000:0
                              I:=IF I=0 THEN T ELSE PUNTER INX I;                                               00651000 T  0000:0
                              STREAM(Q:=P(0,RDF): I,                                                            00651800 T  0003:3
                                   A:=18, D:=I:=PUNTER INX 0);                                                  00652000 T  0005:1
                              BEGIN DS:= 16 LIT"-SYSTEM HANG, F=";                        %104-                 00652400 P  0007:1
                                   SI:=LOC Q; SI:=SI+3;                                                         00652600 T  0009:2
                                   5(DS:=3 RESET;                                                               00652800 T  0010:0
                                     3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));                            00653000 T  0010:2
                                   DS:=2 LIT"; "; SI:=I;                                                        00653200 T  0012:3
                                   63(IF Sc#"." THEN DS:=CHR); DS:=LIT".";                                      00653400 T  0013:2
                                   DI:=A; DS:=8 LIT"29290+JI";    % INI,INI,4,BBW                            00653600 T  0015:1
                                   SI:=A; DS:=44 WDS;                                                           00653800 T  0016:3
                                   DI:=A; DI:=DI+8;               % IOBUSY-                                   00654000 T  0017:1
                                        DS:=4 LIT"002(";          %    0,RTN                                     00654200 T  0017:3
                                   DI:=DI+28;                     % IOCOMPLETE-LOD R,RTN                      00654400 T  0018:2
                                   DS:=32 LIT"0 +A+:2(0U+A+:2(0Y+A+:2(0#+A+:2(";                                00654600 T  0018:3
                              END;                                                                              00654800 T  0023:0
                                                                                                                          00652400
                              P(HP2);                                                                           00655000 T  0023:1
                         HA:  TMB:=I&60[3:42:6];                                                                00655200 T  0023:2
                              P([TMB],II0);                                                                     00655400 T  0025:1
                         HB:  DO IF (TMB:=P(MKS,RSLT)) = 0 THEN  % IO BUSY                                      00655600 T  0025:3
                                BEGIN P(MKS,RSLT,DEL); GO HA END                                                00655800 T  0027:1
                                                                                                                          00655800
                              UNTIL TMB.[3:6]=60;                                                               00656000 T  0029:0
                              IF TMB.[CF]<I THEN GO TO HB;                                                      00656200 T  0030:3
                              IF TMB.[FF]#0 THEN GO TO HA;                                                      00656400 T  0032:2
$ SET OMIT = NOT AUTODUMP                                                                                       00656500 T  0034:1
                              IF NOT HALTSET AND PUNTER[DUMPADR]=@501 THEN                                      00656600 T  0034:1
                              BEGIN                                                                             00656800 T  0036:2
                                   STREAM(S:=[PUNTER[DUMPCRD]], D:=@20);                                        00657000 T  0037:0
                                   BEGIN SI:=S; DS:=19 WDS; END;                                                00657200 T  0038:1
                                                                                                                          00657200
                                   GO TO P(0,STS,0,STF,[M[@20]]);                                               00657400 T  0039:0
                              END;                                                                              00657600 T  0041:2
                                                                                                                          00656800
$ POP OMIT                                                                                                      00657700 T  0041:2
                              DO UNTIL FALSE;                                                                   00657800 T  0041:2
                         END;                                                                                   00662000 T  0042:1
                                                                                                                          00650250
                                                                                                                SIZE= 0043 WORDS
```

```
                $ SET OMIT = DATACOM                                                                    00689990 T  000010
                   $ RESET SEPTICTANK                                                                   00690000 T  000010
                $ POP OMIT                                                                              00699990 T  000010
                $ SET OMIT = NOT DATACOM                                                                00699999 T  000010
                $ SET OMIT = NOT(DFX)                                                                   00999999 T  000010
               SAVE PROCEDURE STARTIO(U); VALUE U; REAL U; FORWARD;                                     01165000 T  000010
                                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00114
PRT(424) = STARTIO
               SAVE PROCEDURE COMPLEXSNOOZE(PRI,CODE); VALUE PRI; REAL PRI,CODE;                        01240000 T  000010
                                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00114
PRT(425) = COMPLEXSNOOZE
                  BEGIN SNOOZE(PRI,1,P(,CODE,LOD)); END;                                                01240100 T  000010
                                                                                                                   01240100
                                                                                                      SIZE= 0002 WORDS
```

```
                DEFINE COMPLEXSLEEP(COMPLEXSLEEP1)=COMPLEXSNOOZE(PRYOR[P1MIX],                    01240200 T  0000:0
                      COMPLEXSLEEP1)#;                                                           01240300 T  0000:0
                PROCEDURE USASITAPE(AREA,TYPE,FROM,U,DIR);                %RHR                   01250100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00002
PRT(426) = USASITAPE
                      VALUE AREA,FROM,U,DIR; REAL AREA,TYPE,FROM,U,DIR;                          01250200 T  0000:0
                BEGIN REAL PTN,Y;                                                                01250300 T  0000:0
STACK(F+1) = PTN
STACK(F+2) = Y
                  ARRAY ULAB[*];                                                                 01250400 T  0000:0
STACK(F+3) = ULAB
                  LABEL EXIT,ERROR,VOL,BAD,WAIT,TIP,ETIP;                                        01250500 T  0000:0
                SUBROUTINE LABELSPACE;                                                           01250600 T  0000:0
                    BEGIN ULAB:=[M[SPACE(11)]]&10[8:38:10];                                      01250700 T  0001:0
                          MOVE(10,ULAB,[CF]-1,ULAB,[CF]);                                        01250800 T  0004:3
                    END LABELSPACE;                                                              01250900 T  0008:1
                                                                                                                  01250700
                SUBROUTINE VOL1FILL;                                                             01251000 T  0008:2
                    BEGIN STREAM(AREA,ULAB);                                                     01251100 T  0009:0
                          BEGIN DS:=8 LIT " LABEL  "; DI:=DI+1; SI:=AREA;                        01251200 T  0010:1
                                SI=SI+11;IF SC=" " THEN DS=7LIT"0" ELSE DS=7CHR;                 01251300 T  0012:0
                                DI=DI+37; %MID                                                   01251310 T  0014:2
                                SI:=AREA; SI:=SI+5; DS:=5 CHR; %PHYSICAL TAPE NO.                01251400 T  0014:3
                          END;                                                                   01251500 T  0015:2
                                                                                                                  01251200
                    END VOL1FILL;                                                                01251600 T  0015:3
                                                                                                                  01251100
SUBROUTINE HDR1CHK;                                                                              01251700 T  0016:0
    BEGIN STREAM(Y:=0:AREA,X:=0);                                                                01251800 T  0016:0
          BEGIN DI:=LOC X; DS:=4 LIT "HDR1";                                                     01251900 T  0017:2
                SI:=AREA; DI:=LOC X;                                                             01252000 T  0018:2
                IF 4 SC=DC THEN TALLY:=1;                                                        01252100 T  0019:0
                Y:=TALLY;                                                                        01252200 T  0019:3
          END;                                                                                   01252300 T  0020:0
                                                                                                                  01251900
          Y:=P;                                                                                  01252350 T  0020:1
    END HDR1CHK;                                                                                 01252400 T  0020:3
                                                                                                                  01251800
SUBROUTINE HDR1FILL;                                                                             01252500 T  0021:0
    BEGIN STREAM(AREA,ULAB);                                                                     01252600 T  0021:0
          BEGIN SI:=AREA; SI:=SI+4;                                                              01252700 T  0022:1
                DI:=DI+17; DS:=7 CHR; %FID                                                       01252800 T  0022:3
                SI:=SI+17; DS:=3 CHR; %REEL                                                      01252900 T  0023:1
                SI:=SI+11; DS:=5 CHR; %C-DATE                                                    01253000 T  0023:3
                SI:=SI-8; DS:=2 CHR; %CYCLE                                                      01253100 T  0024:1
                SI:=SI+7; DS:=5 CHR; %P-DATE                                                     01253200 T  0024:3
                DI:=DI+1; SI:=SI+2;                                                              01253300 T  0025:1
                DS:=5 CHR; %BLOCK COUNT                                                          01253400 T  0025:3
                DS:=7 CHR; %RECORD COUNT                                                         01253500 T  0026:0
          END;                                                                                   01253600 T  0026:1
                                                                                                                  01252700
    END HDR1FILL;                                                                                01253700 T  0026:2
                                                                                                                  01252600
SUBROUTINE HARDFILL;                                                                             01253800 T  0026:3
    BEGIN PTN:=PRNTABLE[U],[30:18];                                                              01253900 T  0027:0
          STREAM(PTN,AREA,ULAB);                                                                 01254000 T  0028:2
          BEGIN SI:=LOC PTN; DI:=DI+53;                                                          01254100 T  0030:0
```

```
                    DS:=5 DEC; DI:=ULAB; %PHYSICAL TAPE NO.                    01254200 T  0030:2
                    DS:=8 LIT " LABEL  ";                                      01254300 T  0031:0
               END;                                                            01254600 T  0032:1
                                                                                        01254100
               ULAB[1]:=MULTITABLE[U];                                         01254650 T  0032:2
          END HARDFILL;                                                        01254700 T  0034:0
                                                                                        01253900
     LABELSPACE;                                                               01254800 T  0034:1
     IF FROM=1 THEN                                                            01254900 T  0037:0
          BEGIN VOL1FILL;                                                      01255000 T  0037:3
               P(WAITIO(@140000005,@377,U),DEL);                               01255100 T  0039:0
               P(WAITIO(AREA INX @120540000000,@377,U),DEL);                   01255200 T  0040:2
               HDR1CHK;                                                        01255300 T  0042:2
               IF Y THEN HDR1FILL ELSE GO TO ERROR;                            01255400 T  0044:0
               P(WAITIO(@340000005,@55,U),DEL);                                01255450 T  0046:0
               P(WAITIO(@340000005,@55,U),DEL);                                01255500 T  0047:2
               GO TO WAIT;                                                     01255600 T  0049:0
          END;                                                                 01255700 T  0053:0
                                                                                        01255000
     IF FROM =2 THEN                                                           01255800 T  0053:0
          BEGIN IF TYPE=1 THEN                                                 01255900 T  0053:3
               BEGIN VOL1FILL;                                                 01256000 T  0055:0
     VOL:           P(WAITIO(AREA INX @120540000000,@377,U),DEL);             01256100 T  0057:0
                    HDR1CHK;                                                   01256200 T  0059:0
                    IF Y THEN HDR1FILL ELSE GO TO ERROR;                       01256300 T  0060:0
                    P(WAITIO(@340000005,@377,U),DEL);                          01256400 T  0062:0
                    GO TO WAIT;                                                01256500 T  0063:2
               END;                                                            01256600 T  0066:0
                                                                                        01256000
                IF TYPE=2 THEN                                                 01256700 T  0066:0
               BEGIN HDR1FILL;                                                 01256800 T  0066:3
                    HARDFILL;                                                  01256900 T  0068:0
                    GO TO EXIT;                                                01257000 T  0069:0
               END;                                                            01257100 T  0069:2
                                                                                        01256800
          END;                                                                 01257200 T  0069:2
                                                                                        01255900
     IF FROM=3 OR FROM=4 THEN                                                  01257300 T  0069:2
          BEGIN IF TYPE=1 THEN                                                 01257400 T  0071:1
               BEGIN VOL1FILL;                                                 01257500 T  0072:2
                    GO TO VOL;                                                 01257600 T  0074:0
               END;                                                            01257700 T  0074:2
                                                                                        01257500
               IF TYPE=2 OR TYPE=4 THEN                                        01257800 T  0074:2
               BEGIN HDR1FILL;                                                 01257900 T  0076:1
                    HARDFILL;                                                  01258000 T  0078:0
                    GO TO EXIT;                                                01258100 T  0079:0
               END;                                                            01258200 T  0079:2
                                                                                        01257900
               IF TYPE=3 OR TYPE=5 THEN                                        01258300 T  0079:2
               BEGIN IF DIR=0 THEN                                             01258400 T  0081:1
                    BEGIN P(WAITIO(@340000005,@377,U),DEL);                    01258500 T  0082:2
                         P(WAITIO(@340000005,@377,U),DEL);                     01258600 T  0084:2
                         P(WAITIO(AREA INX @120540000000,@377,U),DEL);         01258700 T  0086:0
                    END ELSE                                                   01258800 T  0088:0
                                                                                        01258500
                         P(WAITIO(AREA INX @120740000000,@377,U),DEL);         01258900 T  0088:0
```

```
                    HDR1CHK;                                                    01259000 T  009310
                    IF Y THEN HDR1FILL ELSE GO TO ERROR;                        01259100 T  009410
                    HARDFILL;                                                   01259200 T  009610
                    GO TO WAIT;                                                 01259300 T  009710
               END;                                                             01259400 T  009910
                                                                                         01258400
               IF TYPE=6 THEN                                                   01259500 T  009910
                    BEGIN HDR1FILL;                                             01259600 T  009913
                          HARDFILL;                                             01259700 T  010110
                          STREAM(ULAB);                                         01259800 T  010210
                          BEGIN DI:=ULAB; DI:=DI+39;                            01259900 T  010310
                                DS:=1 LIT "1";                                  01260000 T  010312
                          END;                                                  01260100 T  010410
                                                                                         01259900
                          GO TO EXIT;                                           01260200 T  010411
                    END;                                                        01260300 T  010413
                                                                                         01259600
          END;                                                                  01260400 T  010413
                                                                                         01257400
WAIT:     PTN:=0;                                                               01260425 T  010413
TIP:      IF((TWO(U) AND P(RRR)) ≠0) THEN                                       01260450 T  010512
          GO TO EXIT ELSE SLEEP([CLOCK], NOT CLOCK);                            01260455 T  010711
          PTN:=PTN+1;                                                           01260460 T  010912
          IF(PTN>120)THEN GO TO EXIT ELSE GO TO TIP;                            01260465 T  011013
ERROR:    P(WAIT!O(@4200000000,@377,U),DEL);                                    01260500 T  011212
          STREAM(T:=TINU[U],ULAB);                                              01260600 T  011410
               BEGIN SI:=LOC T; SI:=SI+5;                                       01260700 T  011512
                     DS:=LIT "#"; DS:=3 CHR;                                    01260800 T  011610
                     DS:=22 LIT " INVALID USASI,  RW/L←";                       01260900 T  011613
                END;                                                            01261000 T  011913
                                                                                         01260700
               SPOUT(ULAB.[CF]); LABELTABLE[U]:=@314;                           01261100 T  012010
               TYPE←0; PTN←0;                                                   01261150 T  012311
     FTIP:     IF((TWO(U) AND P(RRR)) ≠0) THEN                                  01261160 T  012510
               GO TO BAD ELSE SLEEP([CLOCK], NOT CLOCK);                        01261170 T  012613
               PTN←PTN+1;                                                       01261180 T  012910
               IF(PTN>120) THEN GO TO BAD ELSE GO TO FTIP;                      01261200 T  013011
     EXIT:     MOVE(10,ULAB.[CF],AREA.[CF]);                                    01261300 T  013210
               FORGETSPACE(ULAB.[CF]);                                          01261400 T  013413
     BAD:                                                                       01261450 T  013611
END USASITAPE;                                  %RHR                          01261500 T  013611
                                                                                         01250300
                                                                                SIZE= 0138 WORDS
```

```
                SAVE PROCEDURE SNOOZE(NEWPRI,ADDRESS,MASK);                                    02000000 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00116
                     VALUE NEWPRI, ADDRESS, MASK;                                               02001000 T  0000:0
                     REAL NEWPRI;                                                               02002000 T  0000:0
                     NAME ADDRESS;                                                              02002500 T  0000:0
                     ARRAY MASK[*];                                                             02003000 T  0000:0
                     BEGIN                                                                      02004000 T  0000:0
                        REAL TRYHERE=NT1;                                                       02004500 T  0000:0
PRT(160) = TRYHERE
                $ SET OMIT = NOT(NEWLOGGING)                                                    02004599 T  0000:0
                        LABEL BEDENTER;                                                         02004900 T  0000:0
                        IF (JOBNUM:=JOBNUM+2) GEQ JOBNUMAX THEN PUNT(9);                        02005000 T  0000:0
                     PRYOR[P1MIX].[FF]← NEWPRI← NEWPRI+1;                                       02006000 T  0003:0
                        FOR TRYHERE←JOBNUM STEP -2 UNTIL 2 DO                                   02007100 T  0006:0
                           BEGIN                                                                02007200 T  0007:0
                     IF PRYOR[(BED[TRYHERE]←BED[TRYHERE-2]).[3:5]].[FF]                         02007300 T  0007:0
                           ≤ NEWPRI THEN GO TO BEDENTER;                                        02007400 T  0009:2
                           BED[TRYHERE+1] ← BED[TRYHERE-1];                                     02007500 T  0011:1
                           END;                                                                 02007600 T  0013:3
                                                                                                       02007200
                        BEDENTER:                                                               02008000 T  0016:0
                        BED[TRYHERE] ← P(ADDRESS & P1MIX[3:43:5], RDF);                         02008100 T  0016:0
                        BED[TRYHERE+1] ← MASK;                                                  02008200 T  0018:3
                        STOPLOG(P1MIX,1);                                                       02008300 T  0020:3
                        GO TO NOTHINGTODO;                                                      02008400 T  0023:1
PRT(427) = NOTHINGTODO
                     END SLEEP;                                                                 02009000 T  0023:3
                                                                                                       02004000
                                                                                           SIZE= 0024 WORDS
```

```
                SAVE PROCEDURE INDEPENDENTRUNNER(ROUTINE,PARAMETER,SSZ);
PRT(430) = !NDEPENDENTRUNNER
                        VALUE ROUTINE,PARAMETER,SSZ;
                        ARRAY PARAMETER[*];
                        REAL ROUTINE,SSZ;
                        BEGIN LSLATE:= LSLATE+2 AND SLATEND;%
                        IF NSLATE=LSLATE THEN PUNT(7);
                             SLATE[LSLATE] ← PARAMETER;%
                             SLATE[LSLATE+1]:=ROUTINE&SSZ[CTF];
                        END;%
```

```
                                                02012000 T  0000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00140

                                                02013000 T  0000:0
                                                02014000 T  0000:0
                                                02015000 T  0000:0
                                                02016000 T  0000:0
                                                02017000 T  0002:1
                                                02018000 T  0004:1
                                                02019000 T  0005:3
                                                02020000 T  0008:0
                                                          02016000
                                              SIZE= 0009 WORDS
```

```
                REAL KEYBOARDCOUNTER;                                                                    02020500 T  000010
PRT(431) = KEYBOARDCOUNTER
                REAL PROCEDURE KEYIN(B); VALUE B; BOOLEAN B;  FORWARD;%                                  02021000 T  000010
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00007
PRT(432) = KEYIN
                $ SET OMIT = NOT(DCSPO AND DATACOM )                                                     02021099 T  000010
                BOOLEAN PROCEDURE WHYSLEEP(MASK); VALUE MASK; REAL MASK; FORWARD;%                       02022000 T  000010
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00007
PRT(433) = WHYSLEEP
                LABEL P1PROCESS,P2PROCESS;%                                                              02023000 T  000010
                REAL ONEOHONE = @101,ONEOHTWO = @102;%                                                   02024000 T  000010
PRT(101) = ONEOHONE
PRT(102) = ONEOHTWO
                SAVE PROCEDURE RUN(MIX); VALUE MIX; REAL MIX;%                                           02025000 T  000010
                                                                                                START OF SAVE SEGMENT; BASE ADDRESS = 00149
PRT(434) = RUN
                        BEGIN P1MIX ← MIX;%                                                              02026000 T  000010
                $ SET OMIT = NEWLOGGING                                                                  02026999 T  000013
                        STARTLOG(MIX);                                                                   02027000 T  000013
                $ POP OMIT                                                                               02027001 T  000311
                        STACKUSE ← TRUE;%                                                                02028000 T  000311
                        GO TO EXTERNAL;%                                                                 02029000 T  000510
PRT(435) = EXTERNAL
                    END;%                                                                                02030000 T  000512
                                                                                                                      02026000
                                                                                                                SIZE= 0006 WORDS
```

```
                REAL NUMESS;%
PRT(436) = NUMESS
                SAVE PROCEDURE SAVEMIX(MIX); VALUE MIX; REAL MIX;%

PRT(437) = SAVEMIX
                    BEGIN INDEPENDENTRUNNER(P(.RUN),MIX,0);
                $ SET OMIT = NEWLOGGING
                        STOPLOG(MIX,0);
                $ POP OMIT
                    END;%
```

```
                                                02031000 T  0000:0

                                                02032000 T  0000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00155

                                                02033000 T  0000:0
                                                02033999 T  0001:1
                                                02034000 T  0001:1
                                                02034001 T  0003:3
                                                02035000 T  0003:3
                                                        02033000
                                              SIZE= 0004 WORDS
```

```
                    SAVE PROCEDURE HALT;%                                                                  02036000 T  0000:0
                                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00159
PRT(440) = HALT
                         BEGIN NOPROCESSTOG ← NOPROCESSTOG+1;%                                             02037000 T  0000:0
                               IF P2MIX > 0 THEN%                                                          02038000 T  0001:1
                                  BEGIN P(HP2);%                                                           02039000 T  0002:0
                    $ SET OMIT = NOT(NEWLOGGING)                                                           02039099 T  0002:3
                                     SNOOZE(-1,1,1);                                                       02040000 T  0002:3
                                     IF P2MIX > 0 THEN%                                                    02041000 T  0004:1
                                        BEGIN SAVEMIX(P2MIX);%                                             02042000 T  0005:0
                                              P2MIX←0; TOGLE←TOGLE AND NOT HP2MASK;                        02043000 T  0006:1
                                        END;%                                                              02044000 T  0008:2
                                                                                                                       02042000
                                  END;%                                                                    02045000 T  0008:2
                                                                                                                       02039000
                         END;%                                                                             02046000 T  0008:2
                                                                                                                       02037000
                                                                                                                SIZE= 0009 WORDS
```

```
                    SAVE PROCEDURE KILL(A); VALUE A; ARRAY A[*];%
PRT(441) = KILL
                        BEGIN P(64,STS);%
                              FORGETSPACE(A);%
                              GO TO NOTHINGTODO;%
                        END;%
```

```
                                                    02047000 T  0000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00168

                                                    02048000 T  0000:0
                                                    02049000 T  0000:3
                                                    02050000 T  0001:3
                                                    02051000 T  0002:1
                                                                 02048000
                                                  SIZE= 0003 WORDS
```

```
                REAL PBCOUNT;                                                                                    02052200 T  0000:0
PRT(442) = PBCOUNT
                BOOLEAN PROCEDURE OLAY(LOC); VALUE LOC; REAL LOC; FORWARD;                                       02052500 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00007
PRT(443) = OLAY
                PROCEDURE SEEKNAM(A,B,C,D,E,N,XLST); VALUE A,B;                                                  02052700 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00007
PRT(444) = SEEKNAM
                    REAL A,B,C,D,E,N; ARRAY XLST[*]; FORWARD;                                                    02052800 T  0000:0
                PROCEDURE UNHOOQUE(MIX);%                                                                        02053000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00007
PRT(445) = UNHOOQUE
                        VALUE MIX;%                                                                              02054000 T  0000:0
                        INTEGER MIX;%                                                                            02055000 T  0000:0
                    BEGIN%                                                                                       02056000 T  0000:0
                        REAL U,S,SN,T,X,I,PROCE;%                                                                02057000 T  0000:0
STACK(F+1) = U
STACK(F+2) = S
STACK(F+3) = SN
STACK(F+4) = T
STACK(F+5) = X
STACK(F+6) = I
STACK(F+7) = PROCE
                    NAME OLDQ=X;                                                                                 02057500 T  0000:0
STACK(F+5) = OLDQ
                    LABEL DOLP,DELINKIT;                                                                         02058000 T  0000:0
                        FOR U←0 STEP 1 UNTIL 31 DO%                                                              02059000 T  0000:0
                            BEGIN%                                                                               02060000 T  0003:0
                                IF(S←UNIT[U].[FF])≠@77777 THEN                                                   02061000 T  0003:0
                            BEGIN%                                                                               02062000 T  0005:0
                                WHILE (SN←LOCATQUE[S].[FF])≠@77777 DO%                                           02063000 T  0005:2
                                BEGIN IF (T←NFLAG(LOCATQUE[SN])).[3:5] =%                                        02064000 T  0008:0
                                        MIX THEN%                                                                02065000 T  0009:3
                                    IF LOCATQUE[SN].[11:1] THEN S←SN ELSE                                        02065100 T  0010:1
                                    BEGIN%                                                                       02066000 T  0013:0
                                        LOCATQUE[S]←LOCATQUE[S]&T[FTF];%                                         02067000 T  0015:0
                                        RETURNIOSPACE(SN);                                                       02068000 T  0017:0
                                                                                                                      02068000
                                    END                                 ELSE%                                    02070000 T  0020:1
                                                                                                                      02066000
                                    S←SN;%                                                                       02071000 T  0020:1
                                END%                                                                             02072000 T  0021:2
                                                                                                                      02064000
                            END                                                                                  02072100 T  0021:2
                                                                                                                      02062000
                        END;                                                                                     02072200 T  0022:0
                                                                                                                      02060000
$ SET OMIT = NOT DFX;
   DOLP:    FOR U←0 STEP 1 UNTIL 31 DO%                                                                          02072490 T  0024:1
                BEGIN%                                                                                           02075000 T  0024:1
                    IF (S←(T←UNIT[U]).[FF])≠@77777 THEN                                                          02076000 T  0025:0
                    BEGIN%                                                                                       02077000 T  0025:0
                        IF LOCATQUE[S].[3:5]=MIX THEN%                                                           02078000 T  0027:3
                        BEGIN%                                                                                   02079000 T  0028:1
                            IF (X←T.[13:5])=0 OR X=16 THEN                                                       02080000 T  0029:3
                              GO DELINKIT;                                                                       02081000 T  0030:1
                            IF X=4 THEN%                                                                         02082000 T  0033:0
                                                                                                                 02087000 T  0033:3
```

```
                                        BEGIN%                                                  02088000 T  0034:2
                                             IF LOCATQUE[S],[FF]=@77777 THEN%                   02089000 T  0035:0
                                             BEGIN%                                             02090000 T  0036:2
                                                  I←FIRSTWAIT;%                                 02091000 T  0037:0
                                                  WHILE WAITQUE[I]≠U%                           02092000 T  0037:3
                                                  DO I ← I+1 AND 31;%                           02093000 T  0038:1
                                                  WAITQUE[I]←%                                  02094000 T  0043:0
                                                  WAITQUE[NEXTWAIT←NEXTWAIT%                    02095000 T  0043:2
                                                       +31 AND 31];%                            02096000 T  0043:2
                                                  UNIT[U]←T&@77777[13:28:20];                   02097000 T  0046:0
                                             END ELSE                                           02097200 T  0048:1
                                                                                                                 02090000
   DELINKIT:                                           UNIT[U]:=T&LOCATQUE[S][FTF];             02097400 T  0048:1
$ SET OMIT = NOT DFX                                                                            02097590 T  0052:0
                                             RETURNIOSPACE(S);                                  02100000 T  0052:0
                                                                                                                 02100000
                                        END ELSE                                                02100400 T  0055:1
                                                                                                                 02088000
                                        PROCE←((U≠23 AND U≠24) OR X=3)                          02101000 T  0055:1
                                             AND X≠25 OR PROCE;                                 02101100 T  0058:0
                                   END%                                                         02102000 T  0060:2
                                                                                                                 02080000
                              END%                                                              02103000 T  0060:2
                                                                                                                 02078000
                         END       ;%                                                           02104000 T  0060:2
                                                                                                                 02076000
                    IF PROCE THEN%                                                              02105000 T  0062:3
                         BEGIN%                                                                 02106000 T  0063:0
                              SLEEP([CLOCK],NOT CLOCK); PROCE←0; GO TO DOLP;                    02107000 P  0063:2
                         END;%                                                                  02108000 T  0066:2
                                                                                                                 02106000
FND UNHOOQUE;%                                                                                  02109000 T  0066:2
                                                                                                                 02056000
                                                                                                      SIZE= 0067 WORDS
```

```
                DEFINE PSF=3:4#,
                TERMSET(TERMSET1)=(PRTROW[TERMSET1],[6:1]=1)#,
                NOTERMSET(NOTERMSET1)=(PRTROW[NOTERMSET1],[6:1] NEQ 1)#,
                TERMGOING(TERMGOING1)=(PRTROW[TERMGOING1],[PSF]=3)#,
                BREAKSET(BREAKSET1)=(PRTROW[BREAKSET1],[PSF]=4)#,
                STOPSET(STOPSET1)=(PRTROW[STOPSET1],[PSF]=2)#;
                REAL PROCEDURE GETESPDISK;FORWARD;%
PRT(446) = GETESPDISK
                PROCEDURE CHANGEMCP(KTR); VALUE KTR; REAL KTR; FORWARD;
PRT(447) = CHANGEMCP
                PROCEDURE CHANGEINTRINSICFILE(KTR); VALUE KTR; REAL KTR; FORWARD;
PRT(450) = CHANGEINTRINSICFILE
                 $ SET OMIT = NOT(DEBUGGING)
                REAL PROCEDURE ANALYSIS; FORWARD;
PRT(451) = ANALYSIS
                PROCEDURE SHORTCOMMUNICATE; FORWARD;
PRT(452) = SHORTCOMMUNICATE
                PROCEDURE CONTINUITYBIT; FORWARD;
PRT(453) = CONTINUITYBIT
                REAL CCTBLWORD;
PRT(454) = CCTBLWORD
                DEFINE CCCOUNT    = CCTBLWORD.[FF]#,
                       CCTBLADDR = CCTBLWORD.[CF]#;
                REAL READERA,READERB;
PRT(455) = READERA
PRT(456) = READERB
                 $ SET OMIT = NOT(PACKETS)
                ARRAY PSEUDO[*]; %PSEUDOMAX1
PRT(457) = PSEUDO
                ARRAY PSEUDOMIX[*], NYLONZIPPER[*]; %MIXMAX
PRT(460) = PSEUDOMIX
PRT(461) = NYLONZIPPER
                DEFINE PACKETPAGE[PACKETPAGE1]=PSEUDO[PACKETPAGE1],[22:26]#;
                DEFINE PACKETREC[PACKETREC1]=PSEUDO[PACKETREC1],[18:3]#;
                DEFINE PACKETPBD[PACKETPBD1]=PSEUDO[PACKETPBD1],[8:10]#;
                DEFINE PACKETACT[PACKETACT1]=PSEUDO[PACKETACT1],[2:6]#;
                DEFINE PACKETERR[PACKETERR1]=PSEUDO[PACKETERR1],[1:1]#;
                DEFINE PAGESIZE=300#;        % SAME AS PBDROWSZ AT 08699100        %732-
                DEFINE PAGEFULL=(PAGESIZE DIV 3)*5-40#; % ALLOW FOR 8 INFO RECORDS
                 $ POP OMIT
                 PROCEDURE MESSAGEWRITER;%
PRT(462) = MESSAGEWRITER
                        BEGIN REAL RCW=+0, MSCW=-2;
STACK(F+0) = RCW
STACK(F-2) = MSCW
                              REAL T=+1;%
STACK(F+1) = T
                              LABEL L;%
                              P(0);
                 $ SET OMIT = NOT(DCSPO AND DATACOM )
```

```
                                                                                02110050 T  0000:0
                                                                                02110100 T  0000:0
                                                                                02110200 T  0000:0
                                                                                02110250 T  0000:0
                                                                      %139-     02110260 C  0000:0
                                                                                02110300 T  0000:0
                                                                                02111000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02111100 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02111200 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02111299 T  0000:0
                                                                                02111400 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02111500 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02111600 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02112000 T  0000:0
                                                                                02112100 T  0000:0
                                                                                02112200 T  0000:0
                                                                                02112500 T  0000:0
                                                                                02113079 T  0000:0
                                                                                02113080 T  0000:0
                                                                                02113085 T  0000:0
                                                                                02113086 T  0000:0
                                                                                02113087 T  0000:0
                                                                                02113088 T  0000:0
                                                                                02113089 T  0000:0
                                                                                02113090 T  0000:0
                                                                      %732-     02113091 P  0000:0
                                                                                02113092 T  0000:0
                                                                                02113099 T  0000:0
                                                                                02114000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00010
                                                                                02115000 T  0000:0
                                                                                02116000 T  0000:0
                                                                                02117000 T  0000:0
                                                                                02118000 T  0000:0
                                                                                02119009 T  0000:1
```

```
 $ SET OMIT = DCSPO
L:
 $ POP OMIT
                P(WAITIO(MESSAGEHOLDER INX 1,0,25));
                P(DEL);%
                  NUMESS ← NUMESS-1;%
                T ← M[MESSAGEHOLDER].[18:15];
                     FORGETSPACE(MESSAGEHOLDER INX 1);
                IF T ≠ 0 THEN%
                     BEGIN MESSAGEHOLDER.[33:15] ← T;%
                          GO TO L%
                     END;%

                MESSAGEHOLDER ← 0;%
                KILL([MSCW]);
           END;%
```

```
02119019 T  0000:1
02119020 T  0000:1
02119021 T  0000:1
02120000 T  0000:1
02121000 T  0002:0
02122000 T  0002:1
02123000 T  0003:2
02124500 T  0005:2
02125000 T  0006:3
02126000 T  0007:2
02127000 T  0009:1
02128000 T  0009:3
                    02126000
02129000 T  0009:3
02130000 T  0010:2
02131000 T  0011:1
                    02115000
          SIZE= 0012 WORDS
```

```
                    $ SET OMIT = NOT(DCSPO AND DATACOM  )                                                    02131005 T  0000:0
                    $ SET OMIT = PACKETS                                                                     02131999 T  0000:0
                    $ SET OMIT = NOT(PACKETS)                                                                02132299 T  0000:0
                   PROCEDURE SPOUTER(MESSAGE,UNITNO,TYPE);                                                   02132300 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00011
                        VALUE MESSAGE,UNITNO,TYPE;                                                           02132400 T  0000:0
                        REAL MESSAGE,UNITNO,TYPE;                                                            02132500 T  0000:0
                    $ POP OMIT                                                                               02132501 T  0000:0
                         BEGIN REAL MKSCW=MESSAGE-1;                                                         02133000 T  0000:0
STACK(F-4) = MKSCW
                              INTEGER MIX;                                                                   02133010 T  0000:0
STACK(F+1) = MIX
                    $ SET OMIT = NOT(DATACOM AND DCSPO )                                                     02133011 T  0000:0
                    $ SET OMIT = (DATACOM AND DCSPO)                                          %950-          02133122 C  0000:0
                      INTEGER LFT;                                                            %950-          02133123 C  0000:0
STACK(F+2) = LFT
                    $ POP OMIT                                                                %950-          02133124 C  0000:0
                    $ SET OMIT = NOT(PACKETS)                                                                02133129 T  0000:0
                         DEFINE PACKETFREE=PSEUDO[UNITNO],[21:1]#,                                           02133130 T  0000:0
                                PACKETMASK=@400000000#;                                                      02133140 T  0000:0
                         REAL PSD,PSW,Y,Z,BB;                                                                02133150 T  0000:0
STACK(F+3) = PSD
STACK(F+4) = PSW
STACK(F+5) = Y
STACK(F+6) = Z
STACK(F+7) = BB
                         INTEGER NT1,R,S,T; ARRAY BUF[*];                                                    02133200 T  0000:0
STACK(F+10) = NT1
STACK(F+11) = R
STACK(F+12) = S
STACK(F+13) = T
STACK(F+14) = BUF
                    $ SET OMIT = NOT(DATACOM AND DCSPO) OR OMIT                               %203-          02133279 C  0000:0
                            R:=UNITNO,[CF]; UNITNO:=0;                                                       02133300 T  0000:0
                         IF R=0 THEN IF P1MIX#0 THEN R:=PSEUDOMIX[P1MIX];                                    02133350 T  0005:0
                         IF R>31 AND R<64 THEN UNITNO:=R;                                                    02133380 T  0008:2
                    $ POP OMIT                                                                               02133381 T  0011:2
                    $ SET OMIT = NOT(DATACOM AND DCSPO)                                                      02133499 T  0011:2
                         MESSAGE ← P(.MESSAGE,LOD).[33:15]-1;%                                               02134000 T  0011:2
                         MIX ← M[MESSAGE-1],[9:6];                                                           02134005 T  0013:2
                    $ SET OMIT = NOT(DATACOM AND DCSPO )                                                     02134008 T  0016:0
                    $ SET OMIT = NOT(PACKETS)                                                                02134889 T  0016:0
                         IF TYPE THEN                                                                        02134890 T  0016:0
                    $ POP OMIT                                                                               02134891 T  0016:1
                    $ SET OMIT = NOT(DATACOM AND DCSPO )                                                     02134899 T  0016:1
                         BEGIN                                                                               02134906 T  0016:1
                         IF MESSAGEHOLDER = 0 THEN%                                                          02135000 T  0016:3
                              BEGIN MESSAGEHOLDER ← MESSAGE;%                                                02136000 T  0017:2
                                   INDEPENDENTRUNNER(P(.MESSAGEWRITER),0,64);                                02137000 T  0018:3
                              END%                                                                           02138000 T  0020:0
                                                                                                                       02136000
                         ELSE M[MESSAGEHOLDER,[18:15]].[18:15] ← MESSAGE;                                    02139000 T  0020:0
                         M[MESSAGE]←0&MIX[4:43:5];                                                           02140000 T  0023:1
                         MESSAGEHOLDER.[18:15] ← MESSAGE;%                                                   02141000 T  0025:3
                         END;                                                                                02141020 T  0027:0
                                                                                                                       02134906
                         M[MESSAGE-1].[9:6] ← 0;%                                                            02142000 T  0027:0
```

```
M[MESSAGE-1].[AREATYPEF] := SPOUTMSGAREAV;%                    %167-
IF P(MKSCW,[33:15],DUP)  = 0 THEN%
BEGIN        ;
STREAM(N←0:X←MESSAGE+1);
     BEGIN SI ← X;%
L:         IF SC ≠ "←" THEN%
                BEGIN IF SC= " " THEN%
                     BB:  BEGIN SI← SI+1;
                               IF SC=" " THEN GO BB;
                               IF SC = ALPHA THEN%
                                    BEGIN SI ← SI-1;%
                                          DS ← CHR;%
                                    END ELSE GO TO L;%

                          END;%

                     IF SC = @14 THEN%
                          BEGIN DS ← CHR;%
                          Q:    IF SC = @14 THEN%
                                    BEGIN SI ← SI+1;%
                                          GO TO Q;%
                                    END;%

                               GO TO L;%
                          END;%

                     DS ← CHR;%
                     GO TO L;%
                END;%

                NT1←P;NT1←((NT1.[33:15]-(MESSAGE+1))x8+NT1.[30:3])x6;
                END ELSE        NT1 ← P x 6;

$ SET OMIT = NOT(PACKETS)
                IF UNITNO≠0 THEN IF PACKETPAGE[UNITNO-32]>1 THEN
                BEGIN UNITNO:=UNITNO-32;
                IF NOT PACKETFREE THEN SLEEP([PSEUDO[UNITNO]],PACKETMASK);
                IF (PSD:=PACKETPAGE[UNITNO])>1 THEN
                BEGIN % JUST TO BE SURE
                PACKETFREE:=FALSE;
                Z:=IF (PSW:=PACKETREC[UNITNO]) THEN 60 ELSE 30;
                S:=((Y:=IF NT1>725 THEN 120 ELSE NT1 DIV 6)+7) DIV 8;
                BUF:=[M[T:=SPACE(Z+S)]]&Z[8:38:10];
                M[BUF-2].[9:6]:=0;
                STREAM(N:=S,AA:=MESSAGE+1,BUF:=BUF INX Z);
                BEGIN SI:=AA; DS:=N WDS END;

                DISKWAIT(-T,Z,PSD+PSW DIV 2);
                R:=(PSW×18) MOD 30;
                IF (BB:=BUF[R+17].[CF]) GEQ PAGEFULL THEN
                     BEGIN STREAM(BUF:=[BUF[R]]);
                           BEGIN DS:=12LIT" ";
                           DS:=28LIT"ALL FURTHER MESSAGES LOST    ";
```

```
02142100 C  0030:1
02143000 T  0033:2
02143050 T  0035:0
02144500 T  0035:2
02145000 T  0037:1
02146000 T  0037:2
02147000 T  0038:0
02148000 T  0038:2
02149000 T  0038:3
02150000 T  0039:2
02151000 T  0040:0
02152000 T  0040:1
02154000 T  0040:2
                    02151000
02155000 T  0041:0
                    02148000
02156000 T  0041:0
02157000 T  0041:2
02158000 T  0041:3
02159000 T  0042:1
02161000 T  0042:2
02162000 T  0042:3
                    02159000
02163000 T  0042:3
02164000 T  0043:0
                    02157000
02165000 T  0043:0
02167000 T  0043:1
02168000 T  0043:2
                    02147000
02169000 T  0043:2
02171000 T  0043:3
02172000 T  0044:0
                    02145000
02173000 T  0044:1
02173050 T  0049:0
                    02143050
02173069 T  0050:2
02173075 T  0050:2
02173080 T  0053:3
02173085 T  0055:2
02173087 T  0058:3
02173088 T  0061:0
02173090 T  0061:2
02173095 T  0064:0
02173100 T  0067:2
02173110 T  0072:1
02173120 T  0077:0
02173150 T  0080:2
02173160 T  0083:0
                    02173160
02173210 T  0084:0
02173220 T  0086:2
02173230 T  0088:1
02173240 T  0092:1
02173245 T  0093:3
02173250 T  0095:2
```

```
                2(DI:=DI+48); DS:=6LIT"!x5908";                                  02173255 T  0099:1
                END;                                                             02173260 T  0101:0
                                                                                             02173245
                PACKETPAGE[UNITNO]:=1; % TO MARK OVERFLOW                        02173265 T  0101:1
            END                                                                  02173270 T  0103:3
                                                                                             02173240
        ELSE BEGIN P(@1540005000100000&(BB+1)[CTC]); % PBDSTOPPER                02173275 T  0103:3
            IF PSW=0 THEN                                                        02173280 T  0107:1
            BEGIN P(BUF[29],XCH);                                                02173282 T  0108:0
                P([BUF[29]],STD);                                                02173284 T  0109:1
                DISKWAIT(T,30,PSD+5);                                            02173286 T  0110:0
                P([BUF[29]],STD);                                                02173288 T  0111:3
            END ELSE                                                             02173290 T  0112:2
                                                                                             02173282
            P([BUF[R-1]],STD);                                                   02173292 T  0112:2
            BUF[R+17]:=@1540000104000000&BB[CTC]&                                02173294 T  0115:1
                    (S+2+(M[BUF INX Z],[1:5]#">"))[8:38:10];                     02173296 P  0117:0
            FORMTIME([LFT],XCLOCK+P(RTR));                          %154-        02173297 C  0122:0
            STREAM(N:=S-1,CL:=Sx8-Y,AA:=BUF INX Z,BB := LFT,%154-                02173300 P  0123:2
                BUF:=[BUF[R]]);                                     %154-        02173301 C  0127:0
            BEGIN DS := 7 LIT " "; SI := LOC BB; DS := 8 CHR;                    02173305 P  0127:3
                DS := 9 LIT " "; SI := AA;                          %154-        02173306 C  0129:2
            IF SC#">" THEN DS:=8 CHR ELSE                                        02173310 T  0131:1
            BEGIN DI:=DI-8; 8(IF SC#">" THEN DS:=CHR ELSE                        02173315 T  0132:1
                BEGIN DI:=DI+1; SI:=SI+1; END));                                 02173320 T  0133:3
                                                                                             02173320
            END; N(DS:=8 CHR); DI:=DI-CL; AA:=DI;                                02173325 T  0134:2
                                                                                             02173315
                SI:=AA; SI:=SI-1;                                                02173330 T  0136:1
                IF SC="+" THEN BEGIN DI:=DI-1; DS:=LIT" "; END;                  02173335 T  0136:3
                                                                                             02173335
                CL(DS:=LIT" ");                                                  02173340 T  0138:0
                END;END;                                                         02173345 T  0139:1
                                                                                             02173305
                                                                                             02173275
            DISKWAIT(T,Z,PSD+PSW DIV 2);                                         02173350 T  0139:2
            IF PACKETPAGE[UNITNO]>1 THEN                                         02173360 T  0141:3
            IF PSW=0 THEN                                                        02173362 T  0143:1
            BEGIN PACKETPAGE[UNITNO]:=PSD+3;                                     02173364 T  0144:2
                PACKETREC[UNITNO]:=4;                                            02173366 T  0148:0
            END ELSE                                                             02173368 T  0150:2
                                                                                             02173364
            PACKETREC[UNITNO]:=PSW-1;                                            02173370 T  0150:2
            PACKETFREE:=TRUE;                                                    02173375 T  0155:0
            FORGETSPACE(BUF);                                                    02173380 T  0157:2
            END; % JUST TO BE SURE                                               02173383 T  0158:2
                                                                                             02173088
            END;                                                                 02173385 T  0158:2
                                                                                             02173080
            IF NOT TYPE THEN BEGIN FORGETSPACE(MESSAGE+1); P(XIT);               02173389 T  0158:2
                            END;                                                 02173390 T  0161:0
                                                                                             02173389
$ POP OMIT                                                                       02173391 T  0161:0
            IOTIME[P1MIX] + *P(DUP)+NT1;%                                        02174000 T  0161:0
$ SET OMIT = NOT(DCSPO AND DATACOM )                                             02174005 T  0163:0
$ SET OMIT = DCSPO                                                               02175002 T  0163:0
            IF (NUMESS+ NUMESS+1)>0 THEN                                         02175003 T  0163:0
```

```
$ POP OMIT
                        BEGIN
$ SET OMIT = NOT(DATACOM AND DCSPO )
                        SLEEP([NUMFSS],-0);%
                        END;

        END;%
```

```
02175004 T  016413
02175010 T  016413
02175020 T  016511
02176000 T  016511
02176100 T  016710
                    02175010
02177000 T  016710
                    02133000
          SIZE= 0168 WORDS
```

```
                PROCEDURE ENDOFDECK(R,TUSTA);VALUE R,TUSTA; REAL R,TUSTA;  FORWARD;                02177100 T  0000:0
                                                                             START OF REL SEGMENT; DISK ADDRESS = 00017
PRT(463) = ENDOFDECK
           PROCEDURE PBIO(A,B); VALUE A; REAL A,B; FORWARD;                                    02178500 T  0000:0
                                                                             START OF REL SEGMENT; DISK ADDRESS = 00017
PRT(464) = PBIO
           REAL TERMINALCLOCK;                                                                 02179000 T  0000:0
PRT(465) = TERMINALCLOCK
           PROCEDURE TERMINATE(MIX); VALUE MIX; REAL MIX;%                                     02180000 T  0000:0
                                                                             START OF REL SEGMENT; DISK ADDRESS = 00017
                BEGIN IF MIX LEQ 0 THEN BYBY("MCP DS-ED<",10);                               02181000 T  0000:0
                                                                                                         02181000
                                                                                                         02181000
                IF JARROW[MIX] NEQ 0 THEN                                                    02182000 T  0006:2
                BEGIN                                                                        02183000 T  0007:2
                IF NOTERMSET(MIX) THEN                                                       02184000 T  0008:0
                     BEGIN                                                                   02185000 T  0009:2
                          TERMINALCLOCK:=CLOCK+P(RTR);                                       02185900 T  0010:0
                          PRTROW[MIX].[FF]:=MIX.[FF];                                        02186000 T  0011:1
                          PRTROW[MIX].[PSF]:=1;                                              02186050 T  0013:3
                     END;                                                                    02186100 T  0016:1
                                                                                                         02185000
                END;                                                                         02186300 T  0016:1
                                                                                                         02183000
                END;%                                                                        02187000 T  0016:1
                                                                                                         02181000
                                                                                                   SIZE= 0017 WORDS
```

```
                    REAL PROCEDURE PLACEFINDER(S, A, L);                                02187100 T  0000:0
PRT(466) = PLACEFINDER                                                  START OF REL SEGMENT; DISK ADDRESS = 00018
                         VALUE S, A;                                                    02187200 T  0000:0
                         REAL  S, A, L;                                                 02187300 T  0000:0
                         FORWARD;                                                       02187400 T  0000:0
                   ARRAY CIDROW[*],CIDTABLE=CIDROW[*,*];                                02187500 T  0000:0
PRT(467) = CIDROW
PRT(467) = CIDTABLE
                    PROCEDURE TERMINALMESSAGA(N); VALUE N; REAL N;                      02188000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00018
PRT(470) = TERMINALMESSAGA
                         BEGIN LABEL FOUND,DOIT,OWT,TOIT;                               02189000 T  0000:0
                              REAL A,T,S,ADR;%                                          02190000 T  0000:0
STACK(F+1) = A
STACK(F+2) = T
STACK(F+3) = S
STACK(F+4) = ADR
                         NAME B;%                                                       02191000 T  0000:0
STACK(F+5) = B
                         ARRAY FIB[*];                                                  02191500 T  0000:0
STACK(F+6) = FIB
                         REAL BLEN,NBUF;                                                02191600 T  0000:0
STACK(F+7) = BLEN
STACK(F+10) = NBUF
                    REAL MIXER,TOPIO,LUN,L;%                                            02192000 T  0000:0
STACK(F+11) = MIXER
STACK(F+12) = TOPIO
STACK(F+13) = LUN
STACK(F+14) = L
                         INTEGER I=S; LABEL QZ;%                                        02193000 T  0000:0
STACK(F+3) = I
                    LABEL STT;%                                                         02194000 T  0000:0
                    SUBROUTINE SLAPITOFF;%                                              02195000 T  0000:0
                         IF LUN GEQ 32 THEN                                             02195100 T  0001:0
                    $ SET OMIT = PACKETS                                                02195199 T  0001:3
                         ELSE                                                           02195300 T  0001:3
                         BEGIN SLEEP([TOGLE],STATUSMASK);                               02196000 T  0002:1
                              READY ← NOT (I ← TWO(LUN)) AND READY;%                    02197000 T  0004:1
                              RRRMECH ← NOT I AND RRRMECH OR I AND SAVEWORD;%            02198000 T  0006:3
                              LABELTABLE[LUN] ← @114;%                                  02199000 T  0009:1
                              MULTITABLE[LUN] ← RDCTABLE[LUN] ← 0;%                     02200000 T  0010:2
                         END;%                                                          02201000 T  0012:3
                                                                                                     02196000
                    LABEL LB,LBI;%                                                      02202000 T  0013:0
                    $ SET OMIT = NOT(NEWLOGGING)                                        02202049 T  0013:0
                         NOMEM:=NOMEM-TAR[P1MIX].[20:1]; %IF THIS JOB HAD A NOMEM       02202100 T  0013:0
                         TAR[P1MIX].[20:1]:=0;           %CONDITION - CLEAR IT          02202200 T  0019:2
                         UNLOCKTOG(TAR[P1MIX]);                                         02202500 T  0022:0
                                                                                                     02202500
                         REPLY[P1MIX]←0;%                                               02203000 T  0026:0
                         PRTROW[P1MIX].[PSF]:=3; % IN PROCESS OF DSING                  02205000 T  0027:1
                         PRYOR[P1MIX]←-1;                                               02205100 T  0029:3
                         A ← IF N < 0 THEN ABS(N) ELSE SPACE(10);%                      02206000 T  0031:1
                         IF N=32 THEN JAR[P1MIX,6].[1:1]←1; % MEM PAR        %949-      02206100 C  0035:3
                         B ← PRT[P1MIX,4];%                                             02207000 T  0040:0
                         IF P(M[L←PRT[P1MIX,8].[CF]],TOP,XCH,DEL)THEN          %TR      02208000 T  0041:2
```

```
      S←ADR←0 ELSE                                                    %TR
    DO BEGIN IF P(M[L],TOP,XCH,0,INX,,ADR,←) THEN% OVERLAID RCWTR
          BEGIN IF NOT M[L],[33:1] THEN%NOT TYPE 13 INT
                BEGIN S←ADR; %SEGNO IN RCW
            T←0:ADR←M[M[L],MOM],[CF]; % AND THE MSCW              %TR
                END ELSE S←-1;

          END ELSE % ITS PRESENT: WEVE GOT TO WORK                  %TR

          BEGIN T←0;                                                %TR
                WHILE (S:=M[T],[CF]) LSS ADR DO
                IF S>T THEN T:=S ELSE PUNT(3);
                S←IF M[T],[AREATYPEF]=CODEAREAV THEN%          %167-
                     M[T+1],[CF] ELSE 0;%                      %167-
T←T+2;    END;                                                      %TR

          IF PRT[P1MIX,8],[CF]≠L OR M[L-1],MSFF%STACK IS MARKED
          THEN DO L←M[L],MOM UNTIL NOT M[L],MSFF;%GET LAST MSCW
          L←M[L],MOM;%POINT L TO NEXT RCW,JUST IN CASE.             %TR
END UNTIL (IF S≠0 THEN  IF S=(-1) THEN 0 ELSE

                        (B[0]<S OR NOT B[S],PBIT)
          ELSE (P(M[T-2],[3:12],DUP)≠@700  AND P(XCH)≠@1500));
FOUND:  ADR ← ADR-T;%
        T:=PLACEFINDER(S,ADR,S);
        IF N GTR 0 THEN
        BEGIN
        B ← M[SPACE(TERMSGSZ)];
        DISKWAIT(-(B INX 0),TERMSGSZ,MESSAGETABLE[1],[22:26]);
        END ELSE N:=0;

        STREAM(Z:=N≠0,X:=T,T:=6,J:=[JAR[P1MIX,0]],
             P1MIX,INDX←PRT[P1MIX,8] INX NOT 2 INX 0,
             DSZE←IF P(M[P(DUP)+1],TOP) THEN P ELSE P,[8:10],
             TOG←(N=7), Q←[B[N]], A);
             BEGIN CI ← CI+Z; GO TO L1;%
                   DS:=LIT "="; SI:=Q;
        L:         SI:=SI+1;
                   IF SC = "8" THEN SI:=SI+1 ELSE
                   BEGIN A:=DI; DI:=LOC T;
                        DS:=OCT; DI:=A;
                   END;

                   DS:=T CHR;
                   IF TOGGLE THEN GO TO L;
                   DS ← LIT " "; GO TO L2;%
        L1:        SI ← A;%
                   IF SC ≠ "←" THEN%
                     BEGIN SI ← SI+1; A ← SI;%
                           GO TO L1;%
                     END;%

                   DI ← A;%
        L2:%
                   SI ← J; SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";%
                   SI ← SI+1; DS ← 7 CHR; DS ← LIT "=";%
             SI←LOC P1MIX; DS←2DEC; A←DI;
```

```
02209000 T  0045:0
02210000 T  0046:3
02211000 T  0049:3
02211010 T  0052:0
02212000 T  0053:1
02212100 T  0057:1
                  02211010
02213000 T  0058:3
                  02211000
02214000 T  0058:3
02215000 T  0060:0
02215500 T  0063:0
02216000 P  0066:3
02216010 C  0068:3
02216100 T  0072:2
                  02214000
02216200 T  0073:3
02216300 T  0076:2
02216400 T  0082:3
02216500 T  0084:3
                  02210000
02216510 T  0088:1
02216600 T  0089:1
02217000 T  0095:3
02217100 T  0097:0
02217200 T  0098:3
02217300 T  0099:2
02218000 T  0100:0
02219000 T  0103:2
02220000 T  0107:0
                  02217300
02221000 T  0108:1
02222000 T  0110:3
02222200 T  0113:1
02223000 T  0116:2
02224000 T  0118:2
02225000 T  0119:1
02226000 T  0120:0
02227000 T  0120:1
02228000 T  0121:1
02229000 T  0121:3
02230000 T  0122:1
                  02228000
02231000 T  0122:1
02232000 T  0122:3
02234000 T  0123:1
02235000 T  0124:0
02236000 T  0124:1
02237000 T  0124:3
02238000 T  0125:1
02239000 T  0125:2
                  02237000
02240000 T  0125:2
02241000 T  0125:3
02242000 T  0125:3
02243000 T  0127:0
02244000 T  0128:0
```

```
     DI←DI-2; DS←FILL; DI←A;                                                    02244500 T  0128:3
     SI:=X; DS:=20 CHR; A:=DI;                                                  02245000 T  0129:2
          TOG(DI←A;  DS←2 LIT ", ";  A←DI;  SI←INDX;                            02251010 T  0130:1
               SKIP SB;  IF SB THEN BEGIN DI←INDX;                              02251020 T  0132:0
               SKIP DB;  DS←RESET;  DI←A;  TOG←TALLY;                           02251030 T  0133:0
               DS←12 LIT "EFF INX IS -";  END;                                  02251040 T  0134:0
                                                                                          02251020
               A←DI;  SI←INDX;  DI←LOC Q;  DS←8 DEC;                            02251050 T  0135:3
               SI←LOC Q;  7(IF SC>"0" THEN JUMP OUT;                            02251060 T  0136:3
                    TALLY←TALLY+1;  SI←SI+1);  DI←A;                            02251070 T  0138:1
               T←TALLY;  DS←8 CHR;  DI←DI-T;                                    02251080 T  0139:1
               T(DS←LIT " ");  DI←DI-T;  A←DI);                                 02251090 T  0140:1
          TOG(SI←LOC DSZE;  DI←LOC Q;  DS←4 DEC;                                02251100 T  0142:2
               DI←A;  DS←5 LIT " GEQ ";  SI←LOC Q;                              02251110 T  0143:3
               TALLY←0;  3(IF SC>"0" THEN JUMP OUT;                             02251120 T  0145:1
                    TALLY←TALLY+1;  SI←SI+1);                                   02251130 T  0146:3
          T←TALLY;  DS←4 CHR;  DI←DI-T;                                         02251140 T  0147:2
               T(DS←LIT " ");  DI←DI-T;  A←DI);                                 02251150 T  0148:2
          DI ← A; DS ← LIT "←";%                                                02252000 T  0150:3
     END;%                                                                      02253000 T  0151:2
                                                                                          02224000
IF N≠0 THEN FORGETSPACE(B);                                                     02253050 T  0151:3
S←A;                                                                            02254000 T  0153:3
STREAM(B←S;A←A←SPACE(17));%                                                     02255000 T  0154:2
BEGIN 17(DS←8 LIT"#"); SI←B;DI←A;DI←DI+8;DS←2 LIT" ";%                           02255100 T  0157:2
     17(8(IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2 TO L1)) ;                       02255200 T  0160:2
     L1: DS←2 LIT" ";%                                                          02255500 T  0163:1
END;%                                                                           02256000 T  0163:3
                                                                                          02255100
               SPOUT(S);                                                        02256500 T  0164:0
               IF NOT TERMGO THEN BEGIN HALT;%                                  02257000 T  0165:1
                    COMPLEXSLEEP(-100=NUMESS);%                                 02258000 T  0167:1
ACCIDENTAL ENTRY AT NUMESS
                    DO UNTIL KEYIN(0)=1;                                        02258100 T  0173:0
                    NOPROCESSTOG ← NOPROCESSTOG-1; END;%                        02258200 T  0174:3
                                                                                          02257000
               JAR[P1MIX,1] ←-JAR[P1MIX,1];%                                    02259000 T  0176:0
               UNHOOQUE(P1MIX);%                                                02260000 T  0178:3
               MIXER← @300+P1MIX;%                                              02261000 T  0179:2
               IF N=35 THEN                                  % ES-ED             02261050 T  0180:3
               IF JAR[P1MIX,9].SYSJOBF = PRNPBTCODE THEN                        02261100 T  0181:2
               IF (L:=PRT[P1MIX,@25]) ≠ 0 THEN                                  02261200 T  0184:0
               BEGIN                                                  %675-     02261250 C  0186:2
                    IF (LUN←L.[41:5])<16 THEN SLAPITOFF;              %675-     02261300 P  0187:0
                    LUN←L.[46:2]+19; % LPA, LPB, OR CPA               %675-     02261350 C  0190:0
                    SLAPITOFF;                                        %675-     02261400 P  0191:3
               END; % PRNPBT/DISK ESED: TO CLEAR UNITS.                         02261750 T  0193:0
                                                                                          02261250
          STT: T←MSTART;%                                                       02262000 T  0193:0
               WHILE(L←T.[CF])≠0 DO%                                            02263000 T  0194:1
                    IF (T←M[L]).[3:12]=MIXER AND T>0%                           02264000 T  0196:2
                      THEN%                                                     02265000 T  0199:2
BEGIN LUN ← (TOPIO ← NFLAG(M[L+2])).[12:6];                                     02266000 T  0200:0
     IF LUN ≥32 THEN                                                            02266100 T  0203:3
          BEGIN                                                                 02266200 T  0204:2
               FILECLOSE(TOPIO INX 0);                                          02266300 T  0205:0
               GO TO STT;                                                       02266400 T  0206:1
```

```
      END;                                                                                    02266500 T  0206:3
                                                                                                          02266200
IF UNIT[LUN],[13:5] = @20                                                                     02267000 T  0206:3
      THEN BEGIN%                                                                             02268000 T  0208:0
Q7:%                                                                                          02269000 T  0208:3
            SLAPITOFF;                                                                        02270000 T  0208:3
            UNIT[LUN],[13:5]:=@20;% MARK IT NOT READY ANYWAYS                                 02270500 T  0210:0
            FORGETSPACE(L INX 2);%                                                            02271000 T  0212:2
            GO TO STT;%                                                                       02272000 T  0213:3
            END ELSE                                                                          02273000 T  0214:1
                                                                                                          02268000
BEGIN T ← 0;                                                                                  02274000 T  0214:1
      FIB ← M[TOPIO INX NOT 2];                                                               02275000 T  0215:2
      ADR ← NBUF ← FIB[13],[1:9]-1;                                                           02275100 T  0217:3
IF P(M[TOPIO],[3:5],DUP)=22 OR P(XCH)=26 THEN                                                 02275150 T  0220:1
      BEGIN  FOR S ← 1 STEP 1 UNTIL ADR DO                                                    02275200 T  0223:2
      TOIT:  IF NOT M[TOPIO INX S],[19:1] THEN                                                02275250 T  0225:0
      DOIT:  IF LUN≤18 THEN                                                                   02275300 T  0227:1
                BEGIN  M[TOPIO INX S],[20:1] ← 0;                                             02275350 T  0228:2
                       M[M[TOPIO INX S] INX 17] ← M[TOPIO INX S]                              02275400 T  0232:1
                              & FIB[5] [FTC];                                                 02275450 T  0235:0
                       FIB[5] ← P(DUP,LOD,0,1,CFX,+);                                         02275500 T  0237:2
                       IF NOT PRTROW[P1MIX],[7:1] THEN                                        02275550 T  0240:0
                          IF FIB[14],[CF]=FIB[14],[FF] THEN                                   02275600 T  0241:1
                          BEGIN  PBIO(TOPIO INX S,FIB[14]);                                   02275650 T  0244:0
                                 SLEEP([M[TOPIO INX S]],IOMASK);                              02275700 T  0246:3
                          END ELSE                                                            02275750 T  0249:0
                                                                                                          02275650
                          BEGIN  STREAM(C←M[TOPIO INX S],                                     02275800 T  0249:1
                                        Z←FIB[14],[FF]);                                      02275850 T  0251:2
                                 BEGIN SI ← C; DS ← 18 WDS; END;                              02275900 T  0252:3
                                                                                                          02275900
                          FIB[14],[FF] ← P(DUP),[FF]-18;                                      02275950 T  0253:1
                END;                                                                          02276000 T  0256:2
                                                                                                          02275800
   END ELSE                                                                                   02276050 T  0256:2
                                                                                                          02275350
   BEGIN  IF WAITIO(M[TOPIO INX S],@357,LUN),[45:1]                                           02276100 T  0256:2
             THEN GO OWT;                                                                     02276150 T  0259:2
          FIB[6] ← *P(DUP)+1;                                                                 02276200 T  0260:3
   END;                                                                                       02276250 T  0262:3
                                                                                                          02276100
IF ADR<0 THEN                                                                                 02276260 T  0265:0
   BEGIN  IF ADR THEN FIB[17] ← BLEN; GO OWT;                                                 02276270 T  0265:3
   END;                                                                                       02276280 T  0268:3
                                                                                                          02276270
S ← 0;                                                                                        02276290 T  0268:3
IF FIB[17] < (BLEN←FIB[18],[3:15]) THEN                                                       02276300 T  0269:2
   BEGIN  IF NOT FIB[13] THEN                                                                 02276350 T  0271:3
             FIB[17] ← *P(DUP)-(FIB[5],[46:2]=3);                                             02276360 T  0273:0
          M[TOPIO] ← FLAG(FIB[16]);                                                           02276370 T  0276:3
          STREAM(N←FIB[17],D←M[TOPIO],[CF]);                                                  02276400 T  0278:3
          BEGIN  N(DS ← 8 LIT " ");  END;                                                     02276450 T  0281:1
                                                                                                          02276450
          ADR ← -1; GO DOIT;                                                                  02276500 T  0283:2
   END ELSE ADR ← -2;                                                                         02276550 T  0285:0
                                                                                                          02276350
```

```
                    GO TO IT;                                                                  02276600 T  0286:2
               END ELSE                                                                        02276700 T  0287:0
                                                                                                           02275200
OWT: FOR NT1 ← 0 STEP 1 UNTIL NBUF DO                                                         02276750 T  0287:0
               M[TOPIO INX NT1] ← *P(DUP) OR IOMASK;%                                          02277000 T  0289:0
     IF LUN≤22 AND LUN≥20 OR (LUN≤18 AND % LP OR CP BK-UP                                      02278000 T  0294:0
     (P(M[TOPIO],[3:5],DUP)=22 OR P(XCH)=10))                                                  02278100 T  0296:2
          THEN                                                                                 02278500 T  0299:3
      BEGIN IF LUN ≤ 18 THEN % UNIT IS BACKUP                                                  02279000 T  0300:1
          BEGIN S←17;%                                                                         02280000 T  0301:2
               STREAM(A,D←L+4);                                                                02281000 T  0302:3
               BEGIN SI←A; DS←17 WDS END;%                                                     02282000 T  0304:1
                                                                                                           02282000
               NT4←M[TOPIO INX NOT 2] INX 0;%                                                  02283000 T  0305:0
               NT1←M[NT4+14];%                                                                 02284000 T  0307:3
               NT2←NT1.[FF]; NT1←NT1.[CF];%                                                    02285000 T  0309:3
               IF M[TOPIO],[3:5]=22 THEN % NOT CP BK-UP                                        02285100 T  0312:1
               IF NT1=NT2-72 THEN%                                                             02286000 T  0314:1
               BEGIN NT1←M[NT4+5].[FF];%                                                       02287000 T  0316:0
                    M[NT4+5].[FF]←NT1+1;%                                                      02287100 T  0319:0
                    M[NT2+17]← @1540004002000000 &NT1[CTC];%                                   02287110 T  0322:1
                    M[NT4+14].[FF]←NT2-18;%                                                    02287120 T  0324:3
               END ELSE%                                                                       02287130 T  0328:0
                                                                                                           02287000
                    IF M[NT2+35].[27:6]=0 THEN M[NT2+35].[28:1]←1;                             02287140 T  0328:0
               FIB[17] ← -1;                                                                   02287200 T  0336:1
               M[TOPIO] ← FLAG(FIB[16]&0[20:47:1]&S[8:38:10]);                                 02287210 T  0337:3
          END ELSE %                                                                           02287230 T  0341:3
                                                                                                           02280000
               BEGIN T←(A INX @5400000000000000)&17[8:38:10];          %150-                   02287240 P  0341:3
                    IF SEPARATE THEN T←T&(LUN≠22)[32:47:1]             %150-                   02287245 C  0344:2
                    ELSE T←T&(LUN≠22)[28:47:1];                        %150-                   02287250 P  0346:3
                IF LUN≠22 THEN %IF PUNCH FILE, IGNORE                                          02287254 T  0352:1
                    IF WAITIO(@4002000000,@357,LUN),[45:1] THEN GO QZ;                         02287255 T  0353:0
                    T←WAITIO(T,@357,LUN);%                                                     02287260 T  0356:0
                    IF T,[45:1] THEN GO TO QZ;%                                                02287270 T  0357:3
               END;                                                                            02287280 T  0359:1
                                                                                                           02287240
          END ELSE%                                                                            02290000 T  0359:1
                                                                                                           02279000
               IF LUN=23 OR LUN=24 THEN%                                                       02291000 T  0359:1
               BEGIN ADR←L+4;%                                                                 02292000 T  0362:3
                    LB:  IF(T←UNIT[LUN]),[13:5]=25 THEN%                                       02293000 T  0364:2
               BEGIN ADR ← IOQUE[S←T.[FF]],[33:15];%                                           02294000 T  0366:2
                    STREAM (A←"END";ADR); BEGIN SI ← ADR;%                                     02295000 T  0369:2
          L:SI ← SI +1; IF SC = " " THEN GO TO L;%                                             02296000 T  0371:0
$ SET OMIT = PACKETS                                                                           02296999 T  0372:0
$ SET OMIT = NOT(PACKETS)                                                                      02297009 T  0372:0
          DI:=LOC A;DI:=DI+5; IF 3SC=DC THEN TALLY:=0 ELSE                                     02297010 T  0372:0
          BEGIN DI←LOC A; DS←4 LIT "PACK"; DI←LOC A;                                           02297100 T  0373:2
          SI←SI-3; IF 4SC=DC THEN TALLY←0 ELSE                                                 02297200 T  0374:3
                    TALLY:=1 END; A:=                                                          02297300 T  0376:0
                                                                                                           02297100
$ POP OMIT                                                                                     02297301 T  0376:1
          TALLY END;  IF P THEN BEGIN%                                                         02298000 T  0376:1
                                                                                                           02295000
                                        RETURNIOSPACE(S);                                      02300000 T  0377:1
```

```
                                                                                     02300000
                                   UNIT[LUN]←@7777777777%               02301000 T  0380:2
                       END                                              02302000 T  0381:1
                                                                                     02298000
               ELSE BEGIN M[TOPIO]←M[TOPIO]OR@2004000000; T←0;%         02303000 T  0381:3
               M[M[TOPIO]]←"END.    "&@14[1:43:5]; END;%                02304000 T  0388:2
                                                                                     02303000
               END;                                                     02305000 T  0391:3
                                                                                     02294000
                     IF T≠0 THEN%                                       02306000 T  0391:3
                        BEGIN%                                          02307000 T  0392:2
                        LBI:T←WAITIO(@40000000+ADR,@367,LUN);%          02308000 T  0393:0
               IF T.[45:1] THEN GO TO QZ;%                              02309000 T  0395:1
                           IF T.[42:1] THEN GO TO LB ELSE%              02310000 T  0396:3
                              GO TO LBI%                                02311000 T  0397:2
               END             END;%                                    02312000 T  0398:2
                                                                                     02307000
                                                                                     02292000
                IF T=0 THEN                                             02313000 T  0398:2
                   IF FIB[5].[42:1]                                     02313500 T  0399:1
                      THEN FORGETSPACE(L INX 2)                         02313600 T  0400:0
                      ELSE FILECLOSE(TOPIO INX 0);                      02314000 T  0402:0
               GO TO STT                                                02315000 T  0407:1
         END; END;                                                      02316000 T  0407:3
                                                                                     02274000
                                                                                     02266000
               FORGETSPACE(A);%                                         02317000 T  0408:1
               T←MSTART;MIXER←@400+P1MIX;%                              02318000 T  0409:0
               WHILE(L←T.[CF])≠0 DO%                                    02319000 T  0411:2
                  IF(T←M[L]).[3:12]=MIXER AND T>0 THEN%                 02320000 T  0413:3
                     IF M[M[L+4].[CF]+5].[41:1] THEN FILECLOSE(L+7);    02321000 T  0417:1
               T←MSTART;MIXER←@600+P1MIX;%                              02322000 T  0423:3
               WHILE(L←T.[CF])≠0 DO%                                    02323000 T  0426:1
                  IF(T←M[L]).[3:12]=MIXER AND T>0 THEN%                 02324000 T  0428:2
                  IF M[L+7].[41:1] THEN FILECLOSE(M[L+1] INX 3);%       02325000 T  0432:0
               FOR LUN ← 0 STEP 1 UNTIL 31 DO%                          02326000 T  0438:0
                  IF RDCTABLE[LUN].[8:6] = P1MIX THEN%                  02327000 T  0439:0
                     SLAPITOFF;%                                        02328000 T  0440:2
                  PRT[P1MIX,8]:=T:=NFO[(P1MIX-1)×NDX+2]INX 2;           02328100 T  0444:1
                  M[T]:=-FLAG(0);M[T-1]:=-FLAG(0&(PRT)[6:33:9]);        02328200 T  0448:3
               P(,COM5); GO TO DIFFCOM;                                 02329000 T  0454:2
PRT(471) = DIFFCOM
            END;%                                                       02330000 T  0455:1
                                                                                     02189000
                                                                          SIZE= 0456 WORDS
```

```
SAVE PROCEDURE TERMINALMESSAGE(N); VALUE N; REAL N;

        BEGIN NT1 ← N;
              P(0,STF);
              TERMINALMESSAGA(NT1);
        END;
```

```
                                        02330100 T  0000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00171
                                        02330200 T  0000:0
                                        02330300 T  0000:3
                                        02330400 T  0001:2
                                        02330500 T  0002:1
                                                        02330200
                                              SIZE= 0003 WORDS
```

```
                $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                                02330599 T  0000:0
               ARRAY UNITCODE[*];                                                                       02347100 T  0000:0
PRT(472) = UNITCODE
               INTEGER PSEUDOCOPY;% USED BY STARTADECK TO EXERCISE SOME CONTROL    %541-            02347110 C  0000:0
PRT(473) = PSEUDOCOPY
               %                        OVER THE NO. OF "COPIES" OF CONTROLCARD    %541-            02347120 C  0000:0
               %                        SERVICING PSEUDO-READERS.                  %541-            02347130 C  0000:0
                BOOLEAN PROCEDURE READEMFROMDISK(H,IB);                                                 02347150 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00034
PRT(474) = READEMFROMDISK
                        VALUE H,IB; ARRAY H[*],IB[*]; FORWARD;                                          02347160 T  0000:0
                $ SET OMIT = NOT(PACKETS)                                                               02347199 T  0000:0
               PROCEDURE DRAINO(UNIT,BUMP,ERROR);                                                       02347200 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00034
PRT(475) = DRAINO
                    VALUE UNIT,BUMP,ERROR; REAL UNIT; BOOLEAN BUMP,ERROR;                               02347210 T  0000:0
                        BEGIN REAL T;                                                                   02347220 T  0000:0
STACK(F+1) = T
                    LABEL NEXT;                                                                         02347222 T  0000:0
                        UNIT←UNIT-32;                                                                   02347230 T  0000:0
                        IF BUMP THEN                                                                    02347240 T  0001:2
                        PACKETACT[UNIT]:=PACKETACT[UNIT]-1;                                             02347250 T  0001:3
                        IF ERROR THEN PACKETERR[UNIT]:=TRUE;                                            02347260 T  0006:0
                        IF PACKETACT[UNIT]=0 THEN                                                       02347280 T  0009:1
                        IF LABELTABLE[UNIT+32]≥0 THEN                                                   02347290 T  0010:3
                        IF CIDTABLE[UNIT,3]<CIDTABLE[UNIT,7] THEN                                       02347300 T  0012:3
                        BEGIN                                                                           02347310 T  0015:2
                        LABELTABLE[UNIT+32]←-@14;                                                       02347315 T  0016:0
                        T←SPACE(13)+2; M[T-4].[9:6]←0;                                                  02347320 T  0018:0
                        M[T INX 10]←UNITCODE[UNIT+9];                                                   02347325 T  0024:0
NEXT:                   DO UNTIL READEMFROMDISK(CIDROW[UNIT],                                           02347330 T  0026:3
                        [M[T]]&10[8:38:10]);                                                            02347335 T  0027:2
                        IF PACKETERR[UNIT] THEN BEGIN;                                                  02347340 T  0030:0
                        STREAM(E←"END"; Q←@14,D←T);                                                     02347350 T  0031:2
                        BEGIN SI←LOC Q; SI←SI+7; IF SC≠DC THEN DI←DI+1;                                 02347360 T  0033:0
                            Q←DI; SI←Q;                                                                 02347370 T  0034:1
                        L:  IF SC=" " THEN BEGIN SI←SI+1; GO TO L END;                                  02347380 T  0034:3
                                                                                                                    02347380
                            DI←LOC E; DI←DI+5; IF 3 SC≠DC THEN TALLY←1;                                 02347390 T  0035:3
                            E←TALLY; END;                                                               02347400 T  0037:0
                                                                                                                    02347360
                        IF P THEN GO TO NEXT; END;                                                      02347410 T  0037:2
                                                                                                                    02347340
                        INDEPENDENTRUNNER(P(,CONTROLCARD),T&(UNIT+32)[2:42:6]                           02347430 T  0038:1
                                        &ERROR[1:1:1],192);                                             02347435 T  0039:3
                        PSEUDOCOPY←PSEUDOCOPY+1;%                                   %541-               02347437 C  0042:0
                        END ELSE                                                                        02347440 T  0043:1
                                                                                                                    02347310
                        ENDOFDECK(UNIT,(UNIT+32)&ERROR[1:1:1]);                                         02347450 T  0043:1
                        END DRAINO;                                                                     02347460 T  0047:2
                                                                                                                    02347220
                                                                                                      SIZE= 0048 WORDS
```

```
                $ POP OMIT
              REAL PROCEDURE UNITIN(TINU,WHAT); VALUE WHAT; REAL WHAT;
PRT(476) = UNITIN
                   ARRAY TINU[*];
                   BEGIN REAL HOLD; INTEGER I;%
STACK(F+2) = HOLD
STACK(F+3) = I
                        STREAM(A←0:WHAT);%
                        BEGIN SI ← WHAT;%
                        L:    IF SC = " " THEN
                              BEGIN SI ← SI + 1; GO TO L; END;%

                              DI ← LOC A; DI ← DI + 5; DS ← 3 CHR;%
                        END STREAM;%

                        HOLD ← POLISH;%
                   $ SET OMIT = NOT(SHAREDISK)
                   $ SET OMIT = SHAREDISK
                        FOR I←0 STEP 1 UNTIL 64 DO
                   $ POP OMIT
                        IF TINU[I].[30:18]=HOLD.[30:18] THEN
                        BEGIN
                             HOLD←I;
                             I←70;
                        END;

                        UNITIN←IF I<70 THEN 69 ELSE HOLD;
                   END UNITIN;
```

```
                                                                  02347461 T  000:0
                                                                  02348000 T  000:0
                                                START OF REL SEGMENT; DISK ADDRESS = 00036
                                                                  02348500 T  000:0
                                                                  02349000 T  000:0


                                                                  02350000 T  000:0
                                                                  02351000 T  000:0
                                                                  02352000 T  000:1
                                                                  02353000 T  000:3
                                                                              02353000
                                                                  02353500 T  000:1
                                                                  02354000 T  000:0
                                                                              02351000
                                                                  02355000 T  000:1
                                                                  02355999 T  000:3
                                                                  02356499 T  000:3
                                                                  02356500 T  000:3
                                                                  02356501 T  000:0
                                                                  02357000 T  000:0
                                                                  02357500 T  000:0
                                                                  02357600 T  000:2
                                                                  02357700 T  000:1
                                                                  02357800 T  001:0
                                                                              02357500
                                                                  02358000 T  001:1
                                                                  02359000 T  001:5
                                                                              02349000
                                                SIZE= 0016 WORDS
```

```
                    PROCEDURE IDLETIME;%                                                                    02360000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00037
PRT(477) = IDLETIME
                         BEGIN REAL C,N;%                                                                   02361000 T  0000:0
STACK(F+1) = C
STACK(F+2) = N

STACK(F+3) = T
                              INTEGER T;%                                                                   02362000 T  0000:0

                              HALT;%                                                                        02363000 T  0000:0
                              C ← ((P2MIX≥0)+1)×(CLOCK+P(RTR));%                                            02364000 T  0001:1
                              FOR T ← 1 STEP 1 UNTIL MIXMAX DO%                                             02365000 T  0004:0
                                   IF JAR[T,*] ≠ 0 THEN%                                                    02366000 T  0005:0
                                        BEGIN N ← N+1;%                                                     02367000 T  0006:0
                                             C ← -JAR[T,3]-PROCTIME[T]+C;                                   02368000 T  0007:3
                                        END;%                                                               02369000 T  0010:3
                                                                                                                        02367000
                              IF N ≠ 0 THEN%                                                                02370000 T  0013:0
                                   T ← (C-OLDIDLETIME)/N;%                                                  02371000 T  0013:3
                              OLDIDLETIME ← C;%                                                             02372000 T  0016:0
                              FOR N ← 1 STEP 1 UNTIL MIXMAX DO%                                             02373000 T  0016:3
                                   IF JAR[N,*] ≠ 0 THEN%                                                    02374000 T  0018:0
                                        JAR[N,7] ← *P(DUP)+T;%                                              02375000 T  0019:0
                              NOPROCESSTOG ← NOPROCESSTOG-1;%                                               02376000 T  0024:1
                         END;%                                                                              02377000 T  0025:2
                                                                                                                        02361000
                                                                                                                SIZE= 0026 WORDS
```

```
                DEFINE ENTERUSERFILE(ENTERUSERFILE1,ENTERUSERFILE2,ENTERUSERFILE3)=                02378000 T  0000:0
                 P(EUF(ENTERUSERFILE1,ENTERUSERFILE2,ENTERUSERFILE3),DEL)#;                       02378500 T  0000:0
                REAL PROCEDURE EUF(A,B,L); VALUE A,B,L; REAL A,B,L; FORWARD;                      02379000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00038
PRT(500) = EUF
                 INTEGER PROCEDURE CALCULATEPURGE(PURGE);%                                        02380000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00038
PRT(501) = CALCULATEPURGE
                        VALUE PURGE; REAL PURGE;%                                                 02381000 T  0000:0
                        BEGIN REAL Y,D;%                                                          02382000 T  0000:0
STACK(F+2) = Y
STACK(F+3) = D

                             REAL J;%                                                             02383000 T  0000:0
STACK(F+4) = J
                             REAL C=+1;;%                                                         02384000 T  0000:0
STACK(F+1) = C
                             STREAM(A←[DATE],B←[Y]);%                                             02385000 T  0001:0
                                  BEGIN SI←A; SI←SI+3; DS ← 2 OCT; DS ← 3 OCT END;%                02386000 T  0002:0
                                                                                                              02386000
                             J ← (D ← ( Y+3) DIV 4×1461+(Y+3) MOD 4 × 365 +D+PURGE-%              02387000 T  0003:1
                                  1) DIV 1461;%                                                   02388000 T  0008:0
                             IF (Y ← (D ← D MOD 1461) DIV 365) = 4 THEN%                          02389000 T  0010:0
                                  BEGIN Y ← 3; D ← 365 END ELSE D ← D MOD 365;%                    02390000 T  0012:3
                                                                                                              02390000
                             CALCULATEPURGE ← (4×J+Y-3)×1000+D+1;%                                02391000 T  0018:1
                             STREAM(C←[C]); BEGIN SI←C; DS ← 8 DEC END;%                          02392000 T  0022:0
                                                                                                              02392000
                        END;%                                                                     02393000 T  0023:2
                                                                                                              02382000
                                                                                                    SIZE= 0024 WORDS
```

```
                PROCEDURE CHANGEDATE(BUFF); VALUE BUFF; REAL BUFF; FORWARD;
PRT(502) = CHANGEDATE
                DEFINE MIDNIGHT =  BEGIN XCLOCK:=XCLOCK-WITCHINGHOUR;
                                         DATE:=CALCULATEPURGE(1);
                                         CHANGEDATE(SPACE(10))
                                   END#;
                REAL PROCEDURE TAPELABEL(M,F,R,C,P); VALUE M,F,R,C,P;
PRT(503) = TAPELABEL
                    REAL M,F,R,C,P; FORWARD;
                 $ SET OMIT = NOT (DUMP OR DEBUGGING OR BREAKOUT)
                 REAL MEMASK;
PRT(504) = MEMASK
                 $ POP OMIT
                 $ SET OMIT = NOT DEBUGGING
                 $ SET OMIT = NOT (DEBUGGING OR DUMP)
                PROCEDURE DUMPCORE(BUFF);

                        VALUE BUFF; REAL BUFF;
                        BEGIN REAL B,S,N,TM,TA,U,D;
STACK(F+1) = B
STACK(F+2) = S
STACK(F+3) = N
STACK(F+4) = TM
STACK(F+5) = TA
STACK(F+6) = U
STACK(F+7) = D

                              INTEGER I; REAL MASK,PARITY;
STACK(F+10) = I
STACK(F+11) = MASK
STACK(F+12) = PARITY

                        ARRAY TP[*]; ARRAY TL[*];


                        LABEL X,L1,ERR;
                        SUBROUTINE CHECK;
                        BEGIN
                             IF P(XCH)=@20 THEN
                             BEGIN
                                 STREAM(B+BUFF+BUFF,[15:15]-1);
                                      DS+32LIT"-DPMT ABORTED, TRY ANOTHER TAPE+";
                                 P(WAIT;0(@4740000020,@377,U),DEL); % SPACEBACK
                                 PARITY+1;
                                 GO ERR;
                             END;

                        END;

                             FOR U+0 STEP 1 UNTIL 15 DO
                             IF (MULTITABLE[U] EQV "MEMORY ")=NOT 0 THEN
                             IF (LABELTABLE[U].[5:25]="1DUMP") THEN GO L1;
                             FOR U+0 STEP 1 UNTIL 15 DO IF LABELTABLE[U]=0
                                  AND PRNTABLE[U].[1:1] THEN GO TO L1;
                             BUFF:=BUFF.[15:15]-1;
                             STREAM(BUFF);
                                  DS:=17LIT"#NO MEMDUMP TAPE+";
```

```
                                                    02393100 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00039
                                                    02393200 T  0000:0
                                                    02393225 T  0000:0
                                                    02393250 T  0000:0
                                                    02393300 T  0000:0
                                          %AI       02393400 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00039
                                          %AI       02393500 T  0000:0
                                                    02393790 T  0000:0
                                                    02393800 T  0000:0

                                                    02393810 T  0000:0
                                         %763-      02393999 P  0000:0
                                         %763-      02434051 C  0000:0
                                          %AI       02434100 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00039
                                          %AI       02434110 T  0000:0
                                          %AI       02434120 T  0000:0

                                                    02434125 T  0000:0


                                          %AI       02434130 T  0000:0


                                                    02434135 T  0000:0
                                                    02434162 T  0000:0
                                                    02434164 T  0001:0
                                                    02434166 T  0001:0
                                                    02434168 T  0001:3
                                                    02434170 T  0002:1
                                                    02434172 T  0004:2
                                                    02434174 T  0009:0
                                                    02434176 T  0010:2
                                                    02434178 T  0011:1
                                                    02434180 T  0013:0
                                                                02434168
                                                    02434182 T  0013:0
                                                                02434164
                                                    02434185 T  0013:1
                                                    02434190 T  0018:0
                                                    02434195 T  0019:3
                                          %AI       02434200 T  0024:2
                                          %AI       02434210 T  0028:3
                                          %AI       02434215 T  0033:1
                                          %AI       02434220 T  0035:0
                                          %AI       02434230 T  0035:3
```

```
                GO TO X;                                                %AI         02434240 T  0038:2
L1:             MULTITABLE[U]:="MEMORY ";                               %AI         02434250 T  0039:0
                LABELTABLE[U],[1:29]:=@1024644447;                      %AI         02434260 T  0040:1
                STREAM(A:="001",B:=[LABELTABLE[U]]);                    %AI         02434270 T  0042:3
                BEGIN SI := LOC A; SI := SI + 5;                        %AI         02434280 T  0044:0
                      DI:=DI+5; DS:=3ADD;                               %AI         02434290 T  0044:2
                END;                                                    %AI         02434300 T  0045:0
                                                                                                02434280
                RRRMECH := TWO(U) OR RRRMECH;                           %AI         02434310 T  0045:1
                B←(SPACE(20))&20[8:38:10]&5[21:45:3];                               02434320 T  0047:0
                STREAM(LTT←BUFF,[33:15]<100,BUFF←BUFF,[33:15],B);                   02434330 T  0051:1
                BEGIN                                                   %AI         02434340 T  0054:0
                     DS:=8LIT" "; SI:=B; DS:=19WDS;                     %AI         02434350 T  0054:0
                     DI ← B;                                                        02434360 T  0055:3
                     LTT(SI ← LOC BUFF; DS ← 2 DEC; JUMP OUT 1 TO L);               02434365 T  0056:0
                     SI ← BUFF;                                                     02434367 T  0057:3
                     20(8(IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2             %AI         02434370 T  0058:0
                          TO L));     L:                                    %AI         02434380 T  0060:0
                END;                                                    %AI         02434390 T  0060:3
                                                                                                02434340
                LABELTABLE[U],[1:5]:=@20;                               %AI         02434400 T  0061:0
                TL:=[M[TAPELABEL("MEMORY ",LABELTABLE[U],[6:42],        %AI         02434410 T  0063:2
                     1,1,10)]]&10[8:38:10]&5[21:45:3];                              02434420 T  0065:3
                STREAM(A←PRNTABLE[U],[30:18],TL);                                   02434424 T  0069:3
                     BEGIN SI←LOC A; DI←DI+53; DS←5 DEC END;            %AI         02434426 T  0071:3
                                                                                                02434426
                TP:=[M[TA:=TYPEDSPACE(513,MDUMPAREAV)]]&513[8:38:10]&           02434430 P  0072:3
                     5[21:45:3];%                                       %167-       02434435 C  0075:3
                TM:=0&@1737[1:37:11];                                   %AI         02434440 T  0078:0
                MASK←@40 & @20[CTF];                                                02434445 T  0079:3
                S:=0;                                                   %AI         02434470 T  0081:0
                HALT; SLEEP([TOGLE],STOREMASK);                         %AI         02434480 T  0081:3
                LOCKTOG(STOREMASK);                                                 02434490 T  0083:3
                                                                                                02434490
                WHILE (S:=M[S]).[33:15] NEQ 0 DO                        %AI         02434500 T  0087:1
                     IF M[S].[1:17]=@1000 THEN                          %AI         02434510 T  0090:1
                          D:=DLAY(S,[33:15]);                           %AI         02434520 T  0092:1
                UNLOCKTOG(STOREMASK);                                               02434530 T  0097:0
                                                                                                02434530
                P(WAITIO(TL,MASK,U),DEL);                                           02434532 T  0100:2
                P(WAITIO([TM],MASK,U),DEL);                                         02434534 T  0102:1
                S:=0;                                                   %AI         02434540 T  0103:3
                DO BEGIN                                                %AI         02434550 T  0104:2
                     N:=S.[33:3];                                       %AI         02434560 T  0104:2
                     IF(MEMASK AND TWO(N))NEQ 0 THEN S:=-S                          02434570 T  0105:3
                                          ELSE MOVE(512,S,TA+1);        %AI         02434580 T  0108:0
                     TP[0] := S;                                        %AI         02434590 T  0111:2
                     P(WAITIO(TP,MASK,U)); CHECK;                                   02434600 T  0112:3
                     IF S LSS 0 THEN S := 3584 - S;                     %AI         02434610 T  0115:0
                   END UNTIL (S:=S+512).[18:15];                        %AI         02434620 T  0117:2
                                                                                                02434550
                P(WAITIO(B,MASK,U)); CHECK;                                         02434630 T  0120:0
                LABELTABLE[U].[1:5]←@01;                                %AI         02434690 T  0122:0
                BUFF:=BUFF.[15:15]-1;                                   %AI         02434695 T  0124:2
                STREAM(U←TYNU[U],L←LABELTABLE[U],BUFF);                 %AI         02434700 T  0126:1
                BEGIN                                                   %AI         02434710 T  0128:0
                     SI:=LOC U; SI := SI + 5;                           %AI         02434720 T  0128:0
```

```
                DS:=1LIT" "; DS:=3CHR;                                  %AI     02434730 T  0128:2
                SI←LOC L; SI←SI+1; DS← 1 LIT " "; DS←7 CHR;             %AI     02434735 T  0129:1
                DS:=7LIT" DP=ED←";                                      %AI     02434740 T  0130:2
            END;                                                        %AI     02434750 T  0131:3
                                                                                             02434710
ERR:        P(WAITIO([TM],MASK,U),DEL);                                         02434760 T  0132:0
            P(WAITIO(TL,MASK,U),DEL);                                           02434770 T  0133:2
            IF PARITY THEN SETNOTINUSE(U,1) ELSE                                02434780 T  0135:1
            BEGIN                                                               02434790 T  0137:0
                P(WAITIO([TM],MASK,U),DEL);                                     02434800 T  0139:0
                P(WAITIO(@4740000020,@377,U),DEL);                              02434810 T  0140:2
            END;                                                                02434820 T  0142:0
                                                                                             02434790
            FORGETSPACE(TP);                                                    02434830 T  0142:0
            FORGETSPACE(TL);                                                    02434840 T  0143:0
            FORGETSPACE(B);                                                     02434850 T  0144:0
            NOPROCESSTOG←NOPROCESSTOG=1;                                        02434860 T  0144:3
X:          SPOUT(BUFF);                                                        02434870 T  0146:0
END DUMPCORE;                                                                   02434880 T  0147:1
                                                                                             02434120
                                                                                  SIZE= 0149 WORDS
```

```
                $ POP OMIT                                                                                    02434890 T  0000:0
                $ SET OMIT = NOT(DEBUGGING)                                                                   02434999 T  0000:0
                $ SET OMIT = NOT(DATACOM AND DCSPO )                                                          02522099 T  0000:0
                PROCEDURE NAMEID(A,KTR);%                                                                     02603000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00044
PRT(505) = NAMEID
                    REAL A,KTR;%                                                                              02604000 T  0000:0
                    BEGIN%                                                                                    02605000 T  0000:0
                        STREAM(A←[A];KTR);%                                                                   02606000 T  0000:0
                        BEGIN DI ← A; DS ← 8 LIT "0       ";%                                                 02607000 T  0001:1
                            DI ← DI-7; SI ← KTR;%                                                             02608000 T  0002:3
                        L:  IF SC = " " THEN%                                                                 02609000 T  0003:1
                                BEGIN SI ← SI+1; GO TO L END;%                                                02610000 T  0003:3
                                                                                                                          02610000
                            IF SC = """ THEN%                                                                 02611000 T  0004:1
                                BEGIN SI ← SI+1;%                                                             02612000 T  0004:3
                                    7(IF SC = "←" THEN JUMP OUT TO EXIT;%                                     02613000 T  0005:0
                                        DS ← CHR;%                                                            02614000 T  0006:1
                                        IF SC = """ THEN JUMP OUT TO LQ;);%                                   02615000 T  0006:2
                        LS:             IF SC ≠ """ THEN IF SC ≠ LEFTARROW THEN    %152-                      02615100 C  0007:3
                                           BEGIN SI := SI + 1; GO TO LS; END;      %152-                      02615200 C  0008:3
                                                                                                                          02615200
                                        IF SC = LEFTARROW THEN GO TO EXIT;         %152-                      02615300 C  0009:1
                        LQ:             SI ← SI+1;%                                                           02616000 T  0010:0
                                        GO TO EXIT;%                                                          02617000 T  0010:1
                                END;%                                                                         02618000 T  0010:2
                                                                                                                          02612000
                            IF SC = ALPHA THEN%                                                               02619000 T  0010:2
                                BEGIN 7(DS ← CHR;%                                                            02620000 T  0011:0
                                    IF SC = ALPHA THEN GO TO LA;%                                             02621000 T  0011:2
                                    JUMP OUT TO EXIT;%                                                        02622000 T  0012:1
                        LA:         );%                                                                       02623000 T  0012:3
                        LE: IF SC = ALPHA THEN  %                                                             02623500 T  0013:0
                                BEGIN SI←SI+1; GO TO LE; END;  %                                              02623501 T  0013:2
                                                                                                                          02623501
                                    GO TO EXIT;%                                                              02624000 T  0014:0
                                END;%                                                                         02625000 T  0014:1
                                                                                                                          02620000
                            IF SC = "←" THEN%                                                                 02626000 T  0014:1
                                BEGIN DS ← CHR; SI ← SI-1; GO TO EXIT END;%                                   02627000 T  0014:3
                                                                                                                          02627000
                            IF SC = "=" THEN%                                                                 02628000 T  0015:2
                                BEGIN DS←2 LIT"←←"; SI←SI+1; GO TO EXIT END;                                  02629000 T  0016:0
                                                                                                                          02629000
                            DS ← CHR;%                                                                        02630000 T  0017:0
                        EXIT:A ← SI;%                                                                         02631000 T  0017:1
                        END;%                                                                                 02632000 T  0017:2
                                                                                                                          02607000
                        KTR ← P(XCH);%                                                                        02633000 T  0017:3
                END;%                                                                                         02634000 T  0018:3
                                                                                                                          02605000
                                                                                                                SIZE= 0019 WORDS
```

```
                REAL PROCEDURE TAPELABEL(MULFID,FID,REELNO,CYCLE,PURGE);%                                  02635000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00045
                        VALUE MULFID,FID,REELNO,CYCLE,PURGE;%                                             02636000 T  0000:0
                        REAL MULFID,FID,REELNO,CYCLE,PURGE;%                                              02637000 T  0000:0
                    BEGIN   REAL LBL;%                                                                    02638000 T  0000:0
STACK(F+2) = LBL
                        LBL:=TYPEDSPACE(10,LABELAREAV);%                                    %167-         02639000 P  0000:0
                        STREAM(%                                                                          02640000 T  0002:3
                         DATE, MULFID,FID,REELNO,CYCLE,PU←CALCULATEPURGE(PURGE),%                         02641000 T  0003:0
                               LBL);%                                                                     02642000 T  0005:0
                             BEGIN%                                                                       02643000 T  0005:2
                                  DS←8 LIT" LABEL  ";%                                                    02644000 T  0005:2
                                  SI←LOC MULFID;%                                                         02645000 T  0006:3
                                  DS←WDS;%                                                                02646000 T  0007:0
                                  DS←WDS;%                                                                02647000 T  0007:1
                                  DS←3 DEC;%                                                              02648000 T  0007:2
                                  SI ← LOC DATE; SI ← SI+3;%                                              02649000 T  0007:3
                                  DS ← 5 CHR;%                                                            02650000 T  0008:1
                                  SI←LOC CYCLE;%                                                          02651000 T  0008:2
                                  DS← 2 DEC;                                                              02652000 T  0008:3
                                  SI←LOC PU; SI←SI+3;%                                                    02653000 T  0009:0
                                  DS←5 CHR; DS←1 LIT"0";%                                                 02654000 T  0009:2
                                  5(DS←8 LIT"00000000")%                                                  02655000 T  0010:1
                             END;%                                                                        02656000 T  0012:0
                                                                                                                      02643000
                        TAPELABEL←LBL;%                                                                   02657000 T  0012:1
                    END;%                                                                                 02658000 T  0013:0
                                                                                                                      02638000
                                                                                                                SIZE= 0014 WORDS
```

```
                REAL PROCEDURE LABELASCRATCH(LBL); VALUE LBL;REAL LBL;%                                  02659000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00046
PRT(506) = LABELASCRATCH
                    BEGIN%
                        REAL LUN,TM,REEL,T;                                                              02660000 T  0000:0
                                                                                                         02661000 T  0000:0
STACK(F+2) = LUN
STACK(F+3) = TM
STACK(F+4) = REEL
STACK(F+5) = T

                        LBL ← P(,LBL,LOD).[CF] & 10[8:38:10] &                                           02662000 T  0000:0
                              (IF P(,LBL,LOD).[7:1] THEN 1 ELSE 5)[21:45:3];                             02662050 T  0003:1
                        STREAM(L←LBL+3,R←[REEL]);                                                        02662100 T  0007:0
                        BEGIN SI←L; DS←3 OCT END;                                                        02662200 T  0008:2
                                                                                                                    02662200
                        LUN←FINDOUTPUT(M[LBL+1],M[LBL+2],REEL,0,0,2,0,TM);                               02663000 T  0009:1
                        IF LUN≥0 THEN                                                                    02663100 T  0014:3
                        BEGIN;                                                                           02663200 T  0015:2
                        STREAM(A←PRNTABLE[LUN],[30:18],T←[T],L←LBL+6);                                   02664000 T  0016:0
                        BEGIN DI←DI+5; SI←LOC A; DS←5DEC; SI←SI-8; DI←T;                                 02664100 T  0018:2
                              DS←8DEC; DI←DI-7; DS←6FILL;                 END;                           02665000 T  0019:3
                                                                                                                    02664100
                        RDCTABLE[LUN],[8:6]←P1MIX;                                                       02665100 T  0020:3
                        M[LBL+1],[1:5]:=0;                                          %148-                02665110 C  0023:1
                        MULTITABLE[LUN]←M[LBL+1];                                                        02665150 T  0026:2
                        RRRMECH←TWO(LUN) OR RRRMECH;                                                     02665200 T  0029:0
                        P(WAITIO(LBL,0,LUN),DEL);                                                        02666000 T  0030:3
                        TM←0&"≥←"[1:37:11];%                                                             02667000 T  0032:1
                        P(WAITIO([TM],0,LUN),DEL);%                                                      02668000 T  0034:0
                $ SET OMIT = PACKETS                                                                     02668099 T  0035:2
                        FILEMESSAGE(" OUT"&TITLE[LUN][6:30:18],T,                                        02668500 T  0035:2
                                    M[LBL+1],M[LBL+2],REEL,0,0,OPNMESS);                                 02668600 T  0037:2
                        END;                                                                             02668800 T  0042:1
                                                                                                                    02663200
                        LABELASCRATCH←LUN%                                                               02669000 T  0042:1
                END LABELASCRATCH;%                                                                      02670000 T  0042:1
                                                                                                                    02660000
                                                                                                                SIZE= 0045 WORDS
```

```
                PROCEDURE NSECOND;FORWARD;%                                                                    02692000 T  0000:0
                                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(507) = NSECOND
                 DEFINE  CHECKSTACKSPACE = IF P(PRT[P1MIX,*] INX 0)-P(0,RDS)<128     %WF           02693000 T  0000:0
                           THEN BEGIN P(64,STS);  GO TO STACKOVERFLOW;  END#;        %WF           02694000 T  0000:0
                ARRAY USERCODE[*];                                                                             02695000 T  0000:0
PRT(510) = USERCODE
                REAL PROCEDURE SECURITYCHECK(M,F,U,H);                                                         02696000 T  0000:0
                                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(511) = SECURITYCHECK
                VALUE M,F,U; REAL M,F,U,H; FORWARD;                                                            02696100 T  0000:0
                PROCEDURE MAKEPRESENT(C); VALUE C; REAL C; FORWARD;                                            02696200 T  0000:0
                                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(512) = MAKEPRESENT
                PROCEDURE SIGNOFF(V,F,W);VALUE V,F,W;ARRAY V[*],F[*];REAL W;FORWARD;                            02696300 T  0000:0
                                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(513) = SIGNOFF
                SAVE PROCEDURE IOREQUEST(F,I,L); VALUE F,I,L; ARRAY F,L[*]; REAL I;                            02696500 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00174
PRT(514) = IOREQUEST
                FORWARD;                                                                                       02696600 T  0000:0
                BOOLEAN PROCEDURE MTXIN(I,U,B); REAL U,B; INTEGER I; FORWARD;                                  02696700 T  0000:0
                                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(515) = MTXIN
                 $ SET OMIT = NOT(BREAKOUT AND AUXMEM)                                                         02697299 T  0000:0
                DEFINE CODEADDRESS(CODEADDRESS1,CODEADDRESS2)=                                                 02697710 T  0000:0
                        ACTUALOVERLAYADDRESS(1,CODEADDRESS1,CODEADDRESS2)#,                                    02697720 T  0000:0
                      DATADDRESS(DATADDRESS1,DATADDRESS2)=                                                     02697730 T  0000:0
                        ACTUALOVERLAYADDRESS(0,DATADDRESS1,DATADDRESS2)#;                                      02697740 T  0000:0
                SAVE INTEGER PROCEDURE ACTUALOVERLAYADDRESS(TYPE,MIX,LOC);                                     02697750 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00174
PRT(516) = ACTUALOVERLAYADDRESS
                    VALUE TYPE,MIX,LOC; INTEGER TYPE,MIX,LOC; FORWARD;                                         02697770 T  0000:0
                 $ SET OMIT = NOT(BREAKOUT)                                                                    02700000 T  0000:0
                 $ SET OMIT = NOT(DATACOM AND DCSPO )                                                          03500099 T  0000:0
                 SAVE PROCEDURE INITIATEIO(IODESC,MIX,U);%                                                     04000000 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00174
PRT(517) = INITIATEIO
                        VALUE IODESC,MIX,U;%                                                                   04001000 T  0000:0
                        REAL MIX,U;%                                                                           04002000 T  0000:0
                        REAL IODESC;%                                                                          04003000 T  0000:0
                        BEGIN REAL C=+1;LABEL EXIT;                                                            04004000 T  0000:0
STACK(F+1) = C
                 $ SET OMIT = NOT(STATISTICS)                                                                  04004099 T  0000:0
                           IF (P(IODESC.[3:5]                                  %204-                       04004110 C  0000:0
                 $SET OMIT = DKBNODFX                                          %204-                       04004119 C  0000:0
                                  ,DUP)= @14 OR P(XCH                          %204-                       04004120 C  0000:0
                 $ POP OMIT                                                    %204-                       04004121 C  0001:3
                                  ) = @6) AND                                  %204-                       04004130 C  0001:3
                               NOT IODESC.[24:1] AND                           %204-                       04004140 C  0002:2
                               (((P(MI[IODESC.[CF]],DUP) EQV 0)=NOT 0) OR      %204-                       04004150 C  0003:3
                                ((P(XCH) EQV 32)=NOT 0)) AND                   %204-                       04004155 C  0006:3
                               NOT OKSEGZEROWRITE THEN                         %204-                       04004160 C  0008:3
                                   BYBY("SEGMENT ZERO OVERWRITE←",23);         %204-                       04004170 C  0009:2
                                                                                                                       04004170
                                                                                                                       04004170
                       P(TIO);                                                                                 04004200 T  0017:0
```

```
        CHANNEL[P(DUP)]←U;
        P([IODESC],[10]);
        CHANIO[C]←CLOCK+P(RTR);
$ SET OMIT = NOT(STATISTICS AND AUXMEM)
        IF U < 16 THEN
             BEGIN
             IF IODESC.[22:1] THEN%
                  BEGIN TRANSACTION[U] ← IF IODESC.[18:1] THEN 0%
                             ELSE TRANSACTION[U]-1;%
                       GO TO EXIT;%
                  END;

$ SET OMIT = NOT(STATISTICS)
             END

                ELSE
        IF (U OR 1)=19 THEN
        BEGIN
             FUIO[C]←CLOCK+P(RTR);
$ SET OMIT = NOT(STATISTICS)
        END;

$ RESET OMIT
        TRANSACTION[U] := P(DUP,LOD)+1;
   EXIT:END;%
```

```
04005000 T  0017:1
04006000 T  0018:2
04007000 T  0019:0
04007099 T  0020:3
04008000 T  0020:3
04008100 T  0021:2
04009000 T  0022:0
04010000 T  0022:3
04011000 T  0025:1
04012000 T  0027:1
04013000 T  0027:3
                    04010000
04013009 T  0027:3
04013100 T  0027:3
                    04008100
04013200 T  0027:3
04013300 T  0027:3
04014000 T  0029:2
04014002 T  0030:0
04014009 T  0031:3
04014100 T  0031:3
                    04014000
04014105 T  0031:3
04014500 T  0031:3
04015000 T  0033:3
                    04004000
              SIZE= 0034 WORDS
```

```
                SAVE PROCEDURE QUEUEUP(U); VALUE U ; REAL U;%
PRT(520) = QUEUEUP
                BEGIN IF U=30 THEN
                     WAITQUE[FIRSTWAIT:=(FIRSTWAIT+31) AND 31]:=U ELSE
                     BEGIN WAITQUE[NEXTWAIT] ← U;%
                          NEXTWAIT ← NEXTWAIT+1 AND 31;%
                     END;%

                END;
```

```
                                                    04016000 T  0000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00208

                                                    04016100 T  0000:0
                                                    04016200 T  0000:3
                                                    04017000 T  0004:0
                                                    04018000 T  0005:3
                                                    04019000 T  0007:2
                                                                04017000
                                                    04019100 T  0007:2
                                                                04016100
                                                  SIZE= 0008 WORDS
```

```
                $ SET OMIT = NOT(DFX)
                SAVE PROCEDURE STARTIO(U); VALUE U; REAL U;%                                                    04019499 T  0000:0
                                                                                                               04020000 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00216
                   BEGIN REAL T=NT1,R=NT2, S=NT3;%                                                             04021000 T  0000:0
PRT(160) = T
PRT(161) = R
PRT(162) = S
                $ SET OMIT = NOT(DFX)
                             IF (T ← UNIT[U]),[13:5] = 0 THEN%                                                 04021099 T  0000:0
                                                                                                               04022000 T  0000:0
                             IF (S ← T.[18:15]) < @1777 THEN%                                                  04023000 T  0002:0
                $ SET OMIT = NOT(DFX)                                                                          04023099 T  0004:1
                                BEGIN IF P(T;0) ≠ 0 THEN%                                                      04024000 T  0004:1
                                                                                                               04025000 T  0005:2
                                      BEGIN INITIATEIO(IOQUE[S],LOCATQUE[S],[3:5]                              04026000 T  0007:0
                                                  ,U);%                                                        04027000 T  0008:1
                                           P(3);%                                                              04028000 T  0008:2
                                      END%                                                                                   04025000

                                ELSE BEGIN QUEUEUP(U);%                                                        04029000 T  0008:2
                                           P(4);%                                                              04030000 T  0009:3
                                      END;%                                                                    04031000 T  0010:0
                                                                                                                         04029000
                                P(T&P(XCH)[15:45:3],[UNIT[U]],←);%                                             04032000 T  0010:0
                $ SET OMIT = DFX                                                                               04032999 T  0012:0
                                END;%                                                                          04033000 T  0012:0
                                                                                                                         04024000
                $ POP OMIT                                                                                     04033001 T  0012:0
                $ SET OMIT = NOT(DFX)                                                                          04033049 T  0012:0
                   END;%                                                                                       04034000 T  0012:0
                                                                                                                         04021000
                                                                                                               SIZE= 0013 WORDS
```

```
                    SAVE PROCEDURE PRINTERFINISH(U); VALUE U; REAL U;%
PRT(521) = PRINTERFINISH
                        BEGIN
                    $ SET OMIT = NOT(NEWLOGGING)
                            IF NOT UNIT[U].[16:1] THEN UNIT[U].[17:1] ← 0;
                            STARTIO(U);%
                            GO TO EXTERNAL;%
                        END;%
```

```
                                                    04035000 T  000:0
START OF SAVE SEGMENT; BASE ADDRESS = 00229

                                                    04036000 T  000:0
                                                    04036099 T  000:0
                                                    04036200 T  000:0
                                                    04037000 T  000:1
                                                    04038000 T  000:0
                                                    04039000 T  000:2
                                                                04036000
                                                  SIZE= 0006 WORDS
```

```
                    SAVE PROCEDURE IOREQUEST(FINAL,IODESC,LOCATION);%                                                    04040000 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00235
                            VALUE FINAL,IODESC,LOCATION;%                                                                04041000 T  0000:0
                            ARRAY FINAL,LOCATION[*];%                                                                    04042000 T  0000:0
                            REAL IODESC;%                                                                                04043000 T  0000:0
                            BEGIN REAL U=NT1,T=NT2,S=NT3,R=+1;%                                                          04044000 T  0000:0
PRT(160) = U
PRT(161) = T
PRT(162) = S
STACK(F+1) = R
                    $ SET OMIT = NOT(DFX)                                                                                04044099 T  0000:0
                            IF IOQUESLOTS LFQ                                                                            04045000 T  0000:0
                              (U:=IF LOCATION.[9:1] OR P1MIX=0 THEN 0 ELSE 7) THEN                                       04045100 T  0000:1
                                 SLEEP([IOQUESLOTS],@77=U);                                                              04045200 T  0004:2
                            IOQUEAVAIL ← IOQUE[S:=IOQUEAVAIL];                                                           04046000 T  0007:0
                    $ SET OMIT = NOT(STATISTICS)                                                                         04047009 T  0008:2
                    $ SET OMIT = NOT(DFX)                                                                                04047099 T  0008:2
                    $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                                                               04048701 T  0008:2
                    $ SET OMIT = DFX                                                                                     04048799 T  0008:2
                            IF (T ← UNIT[U ← LOCATION.[12:6]]).[13:5] = 0 THEN                                           04048800 T  0008:2
                    $ POP OMIT                                                                                           04048801 T  0011:3
                                 BEGIN IF P(TIO) ≠ 0 THEN%                                                               04049000 T  0011:3
                                      BEGIN INITIATEIO(IODESC,P1MIX,U);%                                                 04050000 T  0013:0
                                           P(3);%                                                                        04051000 T  0014:3
                                      END ELSE BEGIN QUEUEUP(U);%                                                        04052000 T  0015:0
                                                                                                                                      04050000
                                           P(4);%                                                                        04053000 T  0016:1
                                      END;%                                                                              04054000 T  0016:2
                                                                                                                                      04052000
                                      T ← T&P(XCH)[15:45:3]&S[18:33:15];%                                                04055000 T  0016:2
                                 END ELSE%                                                                               04056000 T  0018:3
                                                                                                                                      04049000
                                 IF T.[18:6] = @77 THEN%                                                                 04057000 T  0018:3
                                      T.[18:15] ← S ELSE%                                                                04058000 T  0020:2
                                 LOCATQUE[P(T.[33:15]+DUP)]←LOCATQUE[R]&%                                                04059000 T  0022:1
                                      S[18:33:15];%                                                                      04060000 T  0024:2
                    $ SET OMIT = NOT(DFX)                                                                                04060099 T  0025:2
                            IOQUESLOTS:=IOQUESLOTS-1;                                                                    04060500 T  0025:2
                            LOCATQUE[S] ← LOCATION&P1MIX[3:43:5] OR @7777700000;%                                        04061000 T  0026:3
                    $ SET OMIT = DFX                                                                                     04061999 T  0029:3
                            UNIT[U] ← T&S[33:33:15];%                                                                    04062000 T  0029:3
                    $ POP OMIT                                                                                           04062001 T  0031:2
                            IOQUE[S] ← IODESC;%                                                                          04063000 T  0031:2
                            FINALQUE[S] ← FINAL;%                                                                        04064000 T  0032:3
                        END;%                                                                                            04065000 T  0034:1
                                                                                                                                      04044000
                                                                                                                  SIZE= 0036 WORDS
```

```
                    SAVE PROCEDURE FINISHOFFIO(U); VALUE U; REAL U;%                                    04067000 T  000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00271
PRT(522) = FINISHOFFIO
                    BEGIN REAL T=NT1, FIN=NT3, V=NT4, IOD=NT6;                                      04068000 T  000:0
PRT(160) = T
PRT(162) = FIN
PRT(163) = V
PRT(165) = IOD
                         LABEL ON,OFF,C0,C1,C2,C3,C4,C5,C6,C7;%                                     04069000 T  000:0
                         SWITCH CSW ← C0,C1,C2,C3,C4,C5,C6,C7;%                                     04070000 T  000:0
                         IF FIN > 0 THEN%                                                           04071000 T  000:0
                         IF FIN.[25:1] THEN%                                                        04072000 T  000:3
                              BEGIN T ← FIN.[3:5];%                                                 04073000 T  000:0
                                   FIN ← FIN&IOD[3:3:5]&0[25:25:1];%                                04074000 T  000:3
                                   GO TO CSW[T];%                                                   04075000 T  000:2
                              END ELSE GO ON ELSE GO ON;%                                           04076000 T  001:2
                                                                                                                04073000
                    C0:  GO TO C0;%                                                                 04077000 T  001:2
                    C1:  FIN.[8:10] ← V;%                                                           04078000 T  001:0
                         GO TO C2;%                                                                 04079000 T  001:3
                    C3:  FIN.[8:10] ← V;%                                                           04080000 T  001:1
                    C4:  FIN ← NOT V INX 1 INX FIN;%                                                04081000 T  001:0
                         GO TO C5;%                                                                 04082000 T  001:0
                    C6:  STREAM(A←0:IOD);%                                                          04083000 T  001:2
                              BEGIN DI ← LOC A; SI ← IOD; SI ← SI+4; DS←4 OCT END;                  04084000 T  001:3
                                                                                                                04084000
                         T ← P DIV 8-1;%                                                            04085000 T  002:0
                    OFF: FIN.[8:10] ← T;%                                                           04086000 T  002:2
                         GO TO C2;%                                                                 04087000 T  002:1
                    C7:  STREAM(A←0:IOD);%                                                          04088000 T  002:3
                              BEGIN DI ← LOC A; SI ← IOD; DS ← 4 OCT END;%                          04089000 T  002:0
                                                                                                                04089000
                         T ← P DIV 8-1;%                                                            04090000 T  002:0
                         FIN ← (NOT T INX 1 INX FIN)&T[8:38:10];%                                   04091000 T  002:2
                         GO TO C5;%                                                                 04092000 T  003:2
                    ON:  IF U < 16 THEN%                                                            04093000 T  003:0
                         IF IOD.[22:1] THEN%                                                        04094000 T  003:3
                    C5:       M[IOD INX 1] ← M[NOT V INX IOD INX 1] ← V%                            04095000 T  003:0
                         ELSE%                                                                      04096000 T  003:3
                    C2:  M[IOD INX NOT 0] ← V;%                                                     04097000 T  003:0
                    END;%                                                                           04098000 T  004:3
                                                                                                                04068000
                                                                                                        SIZE= 0042 WORDS
```

```
                    PROCEDURE PROGRAMRELEASE;%                                                                  04099000 T  000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00048
PRT(523) = PROGRAMRELEASE
                        BEGIN NAME T; REAL FSX=JUNK;                                                            04100000 T  000:0
STACK(F+1) = T
PRT(5) = FSX
                              ARRAY R=-4[*];%                                                                   04101000 T  000:0
STACK(F-4) = R
                              REAL IOD=NT1;%                                                                    04102000 T  000:0
PRT(160) = IOD
                              ARRAY LOCN[*];%                                                                   04103000 T  000:0
STACK(F+2) = LOCN
                              REAL S;                                                                           04103050 T  000:0
STACK(F+3) = S
                              CHECKSTACKSPACE;%                                          %WF                    04103100 T  000:0
PRT(524) = STACKOVERFLOW
                                                                                                                          04103100
                    LOCN←M[S←(IF(IOD←NFLAG(M[P(T←[M[PRT[P1MIX,9]]],DUP,PRL)]))                                  04104000 T  0005:0
                                                    ,[22:1] THEN 2 ELSE NOT 1) INX IOD];                        04105000 T  0008:2
                                IF IOD.[3:5]= 6 THEN                                                        04105100 T  0013:3
                              BEGIN; STREAM(S:=M[PRT[P1MIX,8]] INX P(DUP,0,XCH,DIA 10,                      04105200 T  0015:0
                                    DIB 30,TRB 2),D←@600005);                                               04105300 T  0018:2
                                   BEGIN SI←S; DS←2 CHR END;                                                04105400 T  0019:3
                                                                                                                          04105400
                    $ SET OMIT = NOT(STATISTICS)                                                            04105409 T  0020:2
                              IF JUNK.[36:12]≠45 AND RELTOG                                                 04105500 T  0020:2
                                OR M[IOD].[3:6] = 0 AND M[IOD]  LSS (DIRDSK × DSKTOG) THEN                  04105510 T  0021:3
                          IF (USERCODE[P1MIX] EQV MCP) ≠ NOT 0 THEN %                                       04105550 T  0027:3
                                   BEGIN TERMINATE(P1MIX); TERMINALMESSAGE(30) END;                         04105600 T  0030:3
                                                                                                                          04105600
                                   IF(FSI[P1MIX,(FSX←P(*(NOT 2 INX LOCN),4,COC),[13:11]                     04105650 T  0032:3
                                              DIV 5),[40:4]]                                                04105700 T  0035:3
                                        AND TWO(IOD.[24:1]&FSX[43:44:4]))≠0 THEN                            04105750 T  0037:1
                                   BEGIN T[0]:=T[0]&1[19:47:1]&0[26:40:7];                                  04105800 T  0040:2
                                        M[(*((NOT 2)INX LOCN))INX 5 ]:= NABS(*P(DUP));                      04105850 T  0043:3
                                        GO TO RETURN;                                                       04105890 T  0047:2
PRT(525) = RETURN
                                   END;                                                                     04105900 T  0048:0
                                                                                                                          04105800
                                   IF NOT IOD.[24:1] THEN M[S].[11:1]←1;                                    04105950 T  0048:0
                              END DISK BUSINESS;                                                            04105990 T  0052:1
                                                                                                                          04105200
                               IF IOD.[3:5]=30 THEN GO RETURN; % SPO                      %846-               04105998 C  0052:1
                              IOREQUEST(R,IOD,LOCN);%                                                       04106000 T  0054:2
                              T[0].[19:1] ← 0;                                                              04107000 T  0056:1
                              IF (NT1←P(*(NOT 2 INX LOCN),13,COC),[10:9]-1)≠0 THEN%                         04108000 T  0058:0
                                   STREAM(NT1,C←T[0],T);                                                    04109000 T  0062:0
                                        BEGIN SI ← T; SI ← SI+8; DS ← NT1 WDS;%                             04110000 T  0063:3
                                             SI ← LOC C; DS ← WDS;%                                         04111000 T  0064:3
                                        END;%                                                               04112000 T  0065:1
                                                                                                                          04110000
                              GO TO RETURN;%                                                                04113000 T  0065:2
                         END;%                                                                              04114000 T  0066:0
                                                                                                                          04100000
                                                                                                                SIZE= 0068 WORDS
```

```
                    SAVE PROCEDURE NEWIO;%                                                                  04115000 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00313
PRT(526) = NEWIO
                         BEGIN REAL S=NT3,U=NT4;%                                                           04116000 T  0000:0

PRT(162) = S
PRT(163) = U

                              S ← UNIT[U←WAITQUE[FIRSTWAIT]],[18:15];%                                      04117000 T  0000:0
                              INITIATEIO(IOQUE[S],LOCATQUE[S],[3:5],U);%                                    04118000 T  0002:1
                              FIRSTWAIT ← FIRSTWAIT+1 AND 31;%                                              04119000 T  0004:2
                              UNIT[U],[13:5] ← 3;%                                                          04120000 T  0006:1
                         END;%                                                                              04121000 T  0008:3
                                                                                                                        04116000
                                                                                                                SIZE= 0009 WORDS
```

```
                REAL MDELTA = @11;%                                                    04121050 T  000010
PRT(11) = MDELTA
                REAL MLOG   = @12;%                                                    04121100 T  000010
PRT(12) = MLOG
                REAL MROW   = @13;%                                                    04121150 T  000010
PRT(13) = MROW
                REAL LOGSIZE        = @43;%                                            04121170 T  000010
PRT(43) = LOGSIZE
                REAL LOGHOLDER      = @56;%                                            04121200 T  000010
PRT(56) = LOGHOLDER
                REAL NUMAINTMESS    = @57;%                                            04121250 T  000010
PRT(57) = NUMAINTMESS
                REAL LOGENTRY       = @63;%                                            04121300 T  000010
PRT(63) = LOGENTRY
                REAL NXDISK         = @76;%                                            04121350 T  000010
PRT(76) = NXDISK
                ARRAY MAINTLOGARRAY = @77[*];%                                         04121400 T  000010
PRT(77) = MAINTLOGARRAY
                PROCEDURE DISKORAUXERROR(R); VALUE R; REAL R; FORWARD;                 04121410 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(527) = DISKORAUXERROR
                 PROCEDURE ACTUALIOERR(R); VALUE R; REAL R; FORWARD;                   04121425 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(530) = ACTUALIOERR
                PROCEDURE LINKUP(TYPE,KEY); VALUE TYPE,KEY; REAL TYPE,KEY; FORWARD;%   04121450 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(531) = LINKUP
                PROCEDURE CHECKJOBORFILEMESS(MIX,FIB,U);%                              04121500 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(532) = CHECKJOBORFILEMESS
                        VALUE MIX,FIB,U; REAL MIX,FIB,U; FORWARD;%                     04121550 T  000010
                PROCEDURE LOGOUTMAINT(B); VALUE B; REAL B; FORWARD;%                   04121600 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(533) = LOGOUTMAINT
                PROCEDURE MAINTLOGGER(B); VALUE B; REAL B; FORWARD;%                   04121650 T  000010
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00051
PRT(534) = MAINTLOGGER
                DEFINE                                                                 04121700 T  000010
                      LOGVERSION=(                  % VERSION NUMBER ON NEXT CARD      04121710 T  000010
                                  2                                                    04121720 T  000010
                                 &                  % CURRENT ENTRIES ON NEXT CARD     04121730 T  000010
                                       21                                            04121740 T  000010
                                   [30:42:6])#,                                      04121750 T  000010
                      TAPEBUFFERSIZE = 200#;                                         04121850 T  000010
                ARRAY MAINTBUFFER[*];                                                  04121950 T  000010
PRT(535) = MAINTBUFFER
                 SAVE PROCEDURE IOFINISH(R,C); VALUE R,C; REAL R,C;                    04122000 T  000010
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00322
PRT(536) = IOFINISH
                BEGIN BOOLEAN STOP;                                                    04123000 T  000010
STACK(F+1) = STOP
                     COMMENT                                                           04123010 T  000010
                          WHEN E#0, STOP TAKES THE FOLLOWING VALUES:                   04123020 T  000010
                          0    DISK ERROR (OTHER THAN NOT READY ON A DFX SYSTEM).      04123030 T  000010
                          1    ANY ERROR OTHER THAN THOSE LISTED FOR 0, 2 OR 3.        04123040 T  000010
                          2    LOCKED ADDRESS (SHAREDISK).                            04123050 T  000010
                          3    ANY ERROR OCCURRING WHEN UNIT[U].[5:8]#0 (A RETRY).    04123060 T  000010
```

```
                        WHEN E=0, STOP TAKES THESE VALUES:                                  04123070 T  000010
                        -2    IO FOR WHICH COMPLETE SHOULD NOT BE SET (DATACOM OR            04123080 T  000010
                              DISK WRITE BEFORE READ WITH UNIT OR EU SWITCH).                04123090 T  000010
                        1     PRINTER IO.                                                   04123100 T  000010
                        0     NORMAL IO.                                                    04123110 T  000010
                      END COMMENT;                                                          04123120 T  000010
                      REAL TIM=STOP+1, U=TIM+1;                                             04123500 T  000010
STACK(F+2) = TIM
STACK(F+3) = U
                      LABEL TEST,NOWAIT,PROC,NEW,QUP,INCR;                                  04124000 T  000010
                      LABEL ERRORS,DISKERR,DS,X,SW,LP,DK,DX,DX1,DC,OK,L1;       %111-       04125000 P  000010
                      REAL T=NT1,S=NT2,S1=NT3,V=NT4,E=NT5,I=NT7;%                           04126000 T  000010
PRT(160) = T
PRT(161) = S
PRT(162) = S1
PRT(163) = V
PRT(164) = E
PRT(166) = I
                      NAME LOCN=E;  REAL IOD=NT6, FIN=S1;                                   04127000 T  000010
PRT(164) = LOCN
PRT(165) = IOD
PRT(162) = FIN
                      SWITCH TYPE := OK,LP,OK,OK,DK,OK,OK,OK,OK,OK,DC;           %111-       04128000 P  000010
                                                                                            04128010 T  000010
                $ SET OMIT = NOT(DFX)                                                       04128099 T  000010
                $ SET OMIT = NOT(NEWLOGGING)                                                04128799 T  000010
                      P(CHANIO[C]);                          % INITIALIZES TIM            04128900 T  000010
                      S:=(T:=UNIT[P(CHANNEL[C],DUP)]),[18:15];  % INITIALIZES U            04129000 T  000013
                $ SET OMIT = NOT SEPTICTANK                                                 04129490 T  000312
                %                                                                  %111-    04129520 C  000312
                % CHECK FOR A PARTIAL WORD BINARY READ WITH NO PARITY ERRORS, THIS IS       04129530 C  000312
                % ILLEGAL AND IS MARKED AS BEING A PARITY ERROR.                   %111-    04129540 C  000312
                %                                                                  %111-    04129550 C  000312
                      IF U LEQ 15 THEN % TAPE I/O                                  %111-    04129560 C  000312
                        IF (R.[18:12] AND @4462) = @0440 THEN % BIN READ-NO PAR    %111-    04129570 C  000411
                          IF R.[15:3] ≠ ((8-R.[22:1]) AND 7) THEN % PART WD XFER   %111-    04129580 C  000612
                            R.[28:1] != MOD3;OS; % MARK AS PARITY ERROR IF MOD III I/       04129590 C  000913
                ERRORS:                                                                     04129900 T  001212
                      IF (E ← R.[26:7])+(V ← T.[5:8] ) ≠ 0 THEN%                            04130000 T  001212
                        BEGIN IF(S1 ← FINALQUE[S]) < 0 THEN%                                04131000 T  001513
                            IF (E ← S1.[25:8] AND E) = 0 THEN%                              04132000 T  001713
                              IF V = 0 THEN                                                 04133000 T  002012
                                GO TO SW;                                                   04133500 T  002113
                            IF (U AND @774) ≠ 16 THEN                                       04134000 T  002211
                              BEGIN                                                         04134050 T  002312
                              RDCTABLE[U]:=(*P(DUP))& (C-1)[1:46:2]& R[3:3:5];              04134060 T  002410
                              IF U=30 THEN                                                  04134300 T  002613
                                BEGIN                                                       04134400 T  002813
                                IF (R.[28:5] AND @25) ≠ 0 THEN                              04134500 T  002911
                                  BEGIN                                                     04134600 T  003110
                                  IF ( NOT R.[32:1] AND R.[28:1]) THEN                      04134700 T  003112
                                    GO TO DC;                                               04134800 T  003312
                                  GO TO X;                                                  04134900 T  003411
                                  END                                                       04134950 T  003610
                                                                                                        04134600
                                ELSE GO TO DC;                                              04134955 T  003610
                                END ELSE GO TO X;                                           04134960 T  003610
```

```
                                                                                      04134400
                    END;                                                04134990 T  0036:0
                                                                                      04134050
               IF E = 0 THEN%                                           04135000 T  0036:0
                    BEGIN      % RECOVERED MASS STORAGE %               04137000 T  0036:3
                    MAINTBUFFER[NXDISK:=NXDISK+4 AND 15]                04137100 T  0037:1
                       := ¬0 & U[2:46:2] & LOCATQUE[S][4:3:5] &         04137110 T  0039:0
                          (LOGENTRY:=LOGENTRY+1)[CTF] &                 04137120 T  0041:3
                          RDCTABLE[U][18:1:2];                          04137130 T  0043:1
                    IF FINALQUE[S] GTR 0 THEN                           04137140 T  0045:1
                    BEGIN                                               04137150 T  0046:1
                    MAINTBUFFER[NXDISK]:=(*P(DUP)) &                    04137160 T  0046:3
                            ((M[M[S1:=LOCATQUE[S] INX NOT 2] INX 4]     04137170 T  0047:3
                               .[13:11] DIV ETRLNG)+1)[9:39:9];         04137180 T  0050:2
                    M[S1].[7:1] := 1;                                   04137190 T  0054:1
                    END;                                                04137200 T  0057:0
                                                                                      04137150
                    P(MAINTBUFFER[NXDISK+2]:=IOQUE[S]);                 04137202 T  0057:0
$ SET OMIT = NOT(AUXMEM)                                                04137203 T  0059:0
                    P(NFLAG(M[P]));                                     04137212 T  0059:0
                    P(P&V[1:44:4],[MAINTBUFFER[NXDISK+1]],STD);         04137215 T  0060:0
                    MAINTBUFFER[NXDISK+3]:=MAINTBUFFER[U];              04137220 T  0062:1
                    IF (LOGHOLDER INX 0) = 0 THEN                       04137230 T  0064:1
                    BEGIN                                               04137240 T  0065:2
                      LOGHOLDER.[CF]:=[MAINTBUFFER[NXDISK]];            04137250 T  0066:0
                      INDEPENDENTRUNNER(P(.MAINTLOGGER),0,100);         04137260 T  0067:2
                    END ELSE M[LOGHOLDER.[FF]].[CF]:=                   04137270 T  0068:3
                                                                                      04137240
                         [MAINTBUFFER[NXDISK]];                         04137275 T  0070:2
                    LOGHOLDER.[FF]:=[MAINTBUFFER[NXDISK]];              04137280 T  0072:1
                    NUMAINTMESS:= NUMAINTMESS+1;                        04137290 T  0073:3
                    T.[5:8] ← 0;                                        04142000 T  0075:0
                    GO TO SW;                                           04142500 T  0076:3
                    END;%                                               04143000 T  0077:1
                                                                                      04137000
               IF V = 0 THEN%                                           04144000 T  0077:1
$ SET OMIT = NOT(SHAREDISK)                                             04144099 T  0078:0
                    BEGIN % ORIGINAL ERROR ON MASS STORAGE%             04145000 T  0078:0
                         TINU[U].[18:12] ← P(DUP).[18:12]+1;%           04146000 T  0078:2
                        MAINTBUFFER[U]:=R&TWO(C)[18:43:4];              04146100 T  0082:0
                         RDCTABLE[U]:=(*P(DUP))&(C-1)[1:46:2];          04146200 T  0084:3
                         V:=129;                                        04147000 T  0087:3
$ SET OMIT = NOT(SHAREDISK)                                             04147399 T  0088:2
                    END%                                                04148000 T  0088:2
                                                                                      04145000
               ELSE BEGIN % RECURRENT ERROR ON MASS STORAGE%            04149000 T  0088:2
                        P(MAINTBUFFER[U]:=P(DUP,LOD) OR                 04150100 T  0089:0
                               R&TWO(C)[18:43:4]);                      04150200 T  0090:0
                         IF (V ← V+1) > 137 THEN%                       04151000 T  0092:2
                         BEGIN R:=P;                                    04151200 T  0094:1
                            IF LOCATQUE[S].[9:1] THEN % OLAY I/O        04151220 T  0095:1
                               M[LOCATQUE[S]]:=R OR IOMASK;             04151230 T  0096:1
$ SET OMIT = NOT(AUXMEM)                                                04151235 T  0099:0
   DISKERR:                                                             04151300 T  0099:0
$ SET OMIT = NOT(DFX)                                                   04151399 T  0099:0
                                T.[5:10]:=0;                            04152400 T  0099:0
                                GO TO DX;                               04152600 T  0100:3
```

```
                                FND;                                                                    04152800 T  0101:1
                                                                                                                    04151200
                                P(DEL);                                                                 04152900 T  0101:1
                            END;%                                                                       04153000 T  0101:2
                                                                                                                    04149000
                        UNIT[U] ← T&V[5:40:8];%                                                         04154000 T  0101:2
    DS:%
                        CHANNEL[P(TIO)] ← U;%                                                           04155000 T  0103:3
                        P([IOQUE[S]],IIO);%                                                             04156000 T  0103:3
                        GO TO EXTERNAL ;%                                                               04157000 T  0105:0
    X:                  STOP ← (V≠0)×2+1;%                                                              04158000 T  0105:3
                        T.[5:13] ← 32×E+8;%                                                             04159000 T  0106:1
                        GO TO TEST;                                                                     04160000 T  0108:2
                END;                                                                                    04161000 T  0111:1
                                                                                                        04161500 T  0111:3
                                                                                                                    04131000
    SW:: GO TO TYPE[T.[1:4]];%                                                                          04162000 T  0111:3
    LP:
                IF STOP := (T := T&0[16:16:1]).[17:1] THEN                                              04163000 T  0119:0
    TEST:           IF FIRSTWAIT = NEXTWAIT THEN GO TO INCR ELSE%                                       04164000 T  0119:0
                        GO TO NEW ELSE GO TO NOWAIT;%                                                   04165000 T  0121:3
    DK:                                                                                                 04166000 T  0123:0
          IF NOT (I:=IOQUE[S]).[24:1] THEN                                                              04167900 T  0124:0
          IF FINALQUE[S].[24:1] THEN%                                                                   04168000 T  0124:0
$ SET OMIT = DFX                                                                                        04169000 T  0125:3
          BEGIN                                                                                         04169090 T  0127:1
$ SET OMIT = NOT DKBNODFX OR OMIT                                                                       04169100 T  0127:1
$ SET OMIT = DKBNODFX OR OMIT                                                                           04169190 T  0127:3
              M[IOQUE[S]:=I&1[24:47:1]]:=*(P(DUP) INX P(0,LNG,XCH));                                    04170750 T  0127:3
$ POP OMIT                                                                                              04170800 T  0127:3
              GO TO DS;                                                                                 04170900 T  0132:2
          END ELSE GO TO OK ELSE GO TO OK;                                                              04171000 T  0132:2
                                                                                                        04171200 T  0133:0
                                                                                                                    04169100
$ POP OMIT                                                                                              04171250 T  0133:0
$ SET OMIT = NOT DFX                                                                                    04171350 T  0133:0
    DC:                                                                                                 04174000 T  0133:0
$ SET OMIT = NOT(DATACOM )                                                                              04174999 T  0133:0
                                                                                                        04176000 T  0133:0
$ SET OMIT = DFX                                                                                        04176899 T  0133:0
    DX:  DX1:                                                                                           04176900 T  0133:0
$ POP OMIT                                                                                              04176901 T  0133:0
    OK:  IF FIRSTWAIT = NEXTWAIT THEN                                                                   04177000 T  0133:0
    NOWAIT:   IF (S1 := LOCATQUE[S].[18:15]) LSS @1777 THEN                                             04178000 T  0133:3
                        INITIATEIO(IOQUE[S1],LOCATQUE[S1].[3:5],U)%                                     04180000 T  0136:1
                    ELSE                                                                                04181000 T  0138:3
    PROC:               T := T&0[16:16:2]                                                               04182000 T  0139:0
                ELSE                                                                                    04183000 T  0140:0
                BEGIN%                                                                                  04187000 T  0141:1
    NEW:            NEWIO;%                                                                             04188000 T  0141:3
                    IF STOP THEN GO TO INCR;%                                                           04189000 T  0142:1
    QUP:            IF LOCATQUE[S].[FF] GTR @1777 THEN GO TO PROC;                                      04190000 T  0143:1
                    QUEUEUP(U);%                                                                        04191000 T  0145:1
                    T ← T&4[13:43:5];%                                                                  04192000 T  0146:0
                END;%                                                                                   04193000 T  0147:3
                                                                                                                    04187000
    INCR:                                                                                               04194000 T  0147:3
          IF (TIM←CLOCK+P(RTR)-TIM) LSS 0 THEN TIM←0;                                                   04194050 T  0147:3
          IOD:=IOQUE[S];                                                                                04194100 T  0151:1
```

```
          IF (U OR 1 )=19 THEN                                                                  04194200 T  0152:1
          BEGIN                                                                                 04194300 T  0153:2
               IF (JUNK:=M[IOD].[5:7])>9 THEN                                                   04194400 T  0154:0
                 JUNK:=NEUP.[CF]+(JUNK AND @17);                                                04194500 T  0156:2
               IF JUNK<NEUP.[FF] THEN                                                           04194550 T  0159:1
                 PEUIO[JUNK]:=P(DUP,LOD)+CLOCK+P(RTR)-EUIO[C];                                  04194600 T  0160:2
          END;                                                                                  04194650 T  0164:1
                                                                                                                 04194300
          I←(S1←LOCATQUE[S]).[3:5]; % FIND MIX INDEX                                            04194700 T  0164:1
$ SET OMIT = NOT(NEWLOGGING)                                                                    04194799 T  0166:1
          IOTIME[I]←(*P(DUP))+TIM;                                                              04195000 T  0166:1
          IF P(.S1,LOD).[10:1] THEN FORGETSPACE(IOD);  % NO MEM MESSAGE                         04195100 T  0168:1
          IF F≠0 THEN                                                                           04196200 T  0170:2
               IF STOP THEN                                                                     04196400 T  0171:1
                    P(T)                                                                        04196600 T  0172:0
               ELSE GO TO L1                                                                    04196800 T  0172:2
          ELSE BEGIN                                                                            04197000 T  0172:3
                    RETURNIOSPACE(S);                                                           04199000 T  0173:1
                                                                                                                 04199000
     L1:            P(T&P(.S1,LOD)[FTF]);                                                       04201000 T  0176:2
               END;                                                                             04202000 T  0177:2
                                                                                                                 04197000
          P([UNIT[U]],STD);                                                                     04203000 T  0177:2
          FIN ← FINALQUE[S] AND NOT MEMORY;%                                                    04205000 T  0178:1
          IF (U OR 1) NEQ 17 THEN                                                               04205012 T  0180:0
          IF IOD.[24:1] THEN%                                                                   04206000 T  0181:1
               BEGIN V ← ABS(IOD.[33:15]-R.[33:15]);%                                           04207000 T  0182:2
                    IF IOD.[8:10] < V THEN%                                                     04208000 T  0185:2
                    IF IOD.[23:1] THEN%                                                         04209000 T  0186:3
                         V ← IOD.[8:10];%                                                       04210000 T  0188:0
                    IF U < 16 THEN%                                                             04211000 T  0189:3
                    IF IOD.[21:2] = 0 THEN%                                                     04212000 T  0190:2
                         BEGIN; STREAM(A←0:B←M[S1,[33:15]+V-1]);%                               04213000 T  0192:1
                                   BEGIN SI ← LOC B;%                                           04214000 T  0196:1
                                        IF SC = "←" THEN TALLY ← 1;%                            04215000 T  0196:2
                                        A ← TALLY;%                                             04216000 T  0197:1
                                   END;%                                                        04217000 T  0197:2
                                                                                                                 04214000
                              V ← -P+V;%                                                        04218000 T  0197:3
                         END;%                                                                  04219000 T  0199:0
                                                                                                                 04213000
               IF U ≠ 30 THEN % NOT DCA                                                         04219100 T  0199:0
               FINISHOFFIO(U);%                                                                 04220000 T  0199:3
               END;%                                                                            04221000 T  0201:0
                                                                                                                 04207000
          IF F ≠ 0 THEN%                                                                        04222000 T  0201:0
$ SET OMIT = NOT(SHAREDISK)                                                                     04222499 T  0201:3
               BEGIN IF STOP LEQ 1 THEN                                                         04223000 T  0201:3
                    BEGIN                                                                       04223500 T  0203:0
                         INDEPENDENTRUNNER(                                                     04224000 T  0203:2
                            P(.DISKORAUXERROR)+((U AND @774) NEQ 16),                           04224010 T  0203:3
                              R&S[3:43:5],240);                                                 04224100 T  0205:2
                         LOCATQUE[S].[11:1]:=1;                                                 04224500 T  0207:1
                    END                                                                         04224750 T  0209:3
                                                                                                                 04223500
                    ELSE IF FIN < 0 THEN P(LOCATQUE[S],R,XCH,←);%                               04225000 T  0209:3
               END%                                                                             04226000 T  0212:3
```

```
                                                                                                                      04223000
                  $ SET OMIT = NOT(SHAREDISK)                                                      04226499 T  0212:3
                          ELSE BEGIN%                                                              04227000 T  0212:3
                               IF FIN < 0 THEN P(R OR IOMASK,LOCATQUE[S],+)%                       04228000 T  0213:1
                               ELSE                                                                04229000 T  0216:0
                  $ SET OMIT = NOT (DATACOM OR DFX OR DKBNODFX)                                    04229099 T  0216:0
                                    BEGIN                                                          04229200 T  0216:0
                                    LOCN ← [M[LOCATQUE[S]]];%                                      04230000 T  0216:2
                                    IOD ← IOD.[33:15];%                                            04231000 T  0218:0
                                    WHILE LOCN[0].[33:15] ≠ IOD DO%                                04232000 T  0219:1
                                         LOCN ← 1 INX LOCN;%                                       04233000 T  0221:0
                                    LOCN[0] ← M OR FIN;%                                           04234000 T  0222:3
                               END  END;%                                                          04235000 T  0224:0
                                                                                                                      04229200
                                                                                                                      04227000
                          IF P1MIX = 0 THEN GO TO NOTHINGTODO;%                                    04236000 T  0224:0
                          IF I = P1MIX THEN GO TO RETURN;%                                         04237000 T  0225:3
                          GO TO INITIATE;%                                                         04238000 T  0227:2
PRT(537) = INITIATE
                     END IOCOMPLETE;%                                                              04239000 T  0228:0
                                                                                                                      04123000
                                                                                                          SIZE= 0229 WORDS
```

```
                    SAVE REAL PROCEDURE WAITIO(IOD,MASK,U);%                                                    04240000 T  0000:0
                                                                                                  START OF SAVE SEGMENT: BASE ADDRESS = 00551
                         VALUE MASK,U,IOD;%                                                                     04241000 T  0000:0
                         REAL MASK,U,IOD;%                                                                      04242000 T  0000:0
                         BEGIN%                                                                                 04243000 T  0000:0
                              REAL T;                                                                           04243100 T  0000:0
STACK(F+2) = T
                              DEFINE OCTADE= DS←3 RESET;3(IF SB THEN DS←SET ELSE                                04243200 T  0000:0
                                   DS←RESET;SKIP SB)#;                                                          04243300 T  0000:0
                              IOD ← NFLAG(P(.IOD,LOD))&TINU[U][3:3:5];%                                         04244000 T  0000:0
                              MASK ← NOT MASK;%                                                                 04245000 T  0003:0
                                IOREQUEST(NABS(IOD)&MASK[25:40:8],IOD,                                          04246000 T  0004:0
                                   [IOD]&U[12:42:6]);%                                                          04247000 T  0006:0
                              IOD ← IOD&0[25:25:8]&0[19:19:1];%                                                 04248000 T  0007:2
                              SLEEP([IOD],IOMASK);%                                                             04249000 T  0010:1
                              IF ((WAITIO←IOD.[26:7]) AND MASK AND MASK.[18:15])≠0 THEN                         04250000 T  0011:3
                              BEGIN                                                                             04251000 T  0015:0
                                   T←SPACE(12);                                                                 04251100 T  0015:2
                                   STREAM(IOD←IOD.[26:7],MASK←(NOT MASK).[41:7],                                04251200 T  0017:3
                                        Z←[TINU[U]],T←T);                                                       04251300 T  0019:3
                                   BEGIN DS←20 LIT" UNEXP I=O ERROR ON ";SI←Z;                                  04251400 T  0020:3
                                        SI←SI+5;DS←3 CHR;DS←8 LIT":RESULT=";                                    04251500 T  0023:3
                                        SI←LOC IOD;SI←SI+6;SKIP 3 SB;3(OCTADE);                                 04251600 T  0025:2
                                        DS←6 LIT",MASK=" ;SI←SI+6;SKIP 3 SB;                                    04251700 T  0029:0
                                        3(OCTADE);DS←2 LIT",←";                                                 04251800 T  0030:2
                                   END;                                                                         04251900 T  0033:3
                                                                                                                         04251400
                                   IF P1MIX = 0 THEN BEGIN P(T); PUNT(0) END;                                   04252000 T  0034:0
                                                                                                                         04252000
                                   IF NOTERMSET(P1MIX) THEN                                                     04252100 T  0036:1
                                   BEGIN                                                                        04252200 T  0037:3
                                        TERMINATE(P1MIX&19[18:33:15]);                                          04252300 T  0038:1
                                        IF JAR[P1MIX,9].SYSJOBF THEN %SYSTEM JOB                                04252500 T  0039:2
                                        BEGIN                                                                   04252600 T  0041:0
                                             SPOUT(T);                                                          04252700 T  0041:2
                                             BLASTQ(U);                                                         04252800 T  0042:3
                                        END ELSE                                                                04252900 T  0043:2
                                                                                                                         04252600
                                        TERMINALMESSAGE(-T);                                                    04253000 T  0043:2
                                   END;                                                                         04253100 T  0045:0
                                                                                                                         04252200
                              END;                                                                              04253200 T  0045:0
                                                                                                                         04251000
                         END;                                                                                   04253300 T  0045:0
                                                                                                                         04243000
                                                                                                                SIZE= 0046 WORDS
```

```
                REAL PROCEDURE TAPEPARITYRETRY(R,U,KEY);%
PRT(540) = TAPEPARITYRETRY
                    VALUE R,U,KEY; REAL R,U,KEY; FORWARD;%
                REAL PROCEDURE WRITEPARITYREELSWITCH(OIOD,RC);
                (
PRT(541) = WRITEPARITYREELSWITCH
                VALUE OIOD,RC; REAL OIOD,RC;            FORWARD;
                PROCEDURE DISKORAUXERROR(R); VALUE R; REAL R;


                   BEGIN
                   REAL    MSCW     = -2,
STACK(F-2) = MSCW
                           U        = +1,
STACK(F+1) = U
                           S        = +2,
STACK(F+2) = S
                           E        = +3,
STACK(F+3) = E
                           T        = +4,
STACK(F+4) = T
                           MK       = +5,       CELL   = MK,
STACK(F+5) = MK
STACK(F+5) = CELL
                           IOD      = +6,
STACK(F+6) = IOD
                           MIX      = +7,
STACK(F+7) = MIX
                           FIN      = +8,       PARITY= FIN,
STACK(F+10) = FIN
STACK(F+10) = PARITY
                           KEY1     = +9,
STACK(F+11) = KEY1
                           KEY2     = +10,
STACK(F+12) = KEY2
                           DISC     = +11,
STACK(F+13) = DISC
                           MASK     = +12,
STACK(F+14) = MASK
                           AREA     = +13,      U1     = AREA,
STACK(F+15) = AREA
STACK(F+15) = U1
                           RSLT     = +14,      MSG    = RSLT,
STACK(F+16) = RSLT
STACK(F+16) = MSG
                           PRTMAX   = +15,      T1     = PRTMAX,
STACK(F+17) = PRTMAX
STACK(F+17) = T1
                           DISKCELL= +16,       T2     = DISKCELL,
STACK(F+20) = DISKCELL
STACK(F+20) = T2
                           TERMNATE = +17,
STACK(F+21) = TERMNATE
                           OLAYIO   = +18,
STACK(F+22) = OLAYIO
                           DSKADRS = +19;
```

```
                                04254000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00051

                                04255000 T  0000:0
                                04255100 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00051

                                04255200 T  0000:0
                                04256000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00051
                                04256200 T  0000:0
                                04256400 T  0000:0
                                04256600 T  0000:0

                                04256800 T  0000:0

                                04257000 T  0000:0

                                04257200 T  0000:0

                                04257400 T  0000:0

                                04257600 T  0000:0


                                04257800 T  0000:0

                                04258000 T  0000:0

                                04258200 T  0000:0

                                04258400 T  0000:0

                                04258600 T  0000:0

                                04258800 T  0000:0

                                04259000 T  0000:0

                                04259200 T  0000:0

                                04259400 T  0000:0

                                04259600 T  0000:0

                                04259800 T  0000:0

                                04260000 T  0000:0

                                04260200 T  0000:0

                                04260400 T  0000:0
```

```
STACK(F+23) = DSKADRS
                                                                                              04260600 T  0000:0
                   NAME    LOCN    = +16;                                                     04260800 T  0000:0
STACK(F+20) = LOCN
                                                                                              04261000 T  0000:0
                   LABEL DSIT, START, QUIT, RETRY, KILLL, KILLER;                             04261200 T  0000:0
                 $ SET OMIT = NOT(PACKETS)                                                    04261299 T  0000:0
                   DEFINE UNITNO = PSEUDOMIX[MIX]#;                                           04261300 T  0000:0
                 $ POP OMIT                                                                   04261301 T  0000:0
                                                                                              04261400 T  0000:0
                 $ SET OMIT = NOT(AUXMEM)                                                     04261600 T  0000:0
                                                                                              04271200 T  0000:0
                   SUBROUTINE DISKMESSAGE;                                                    04271400 T  0000:0
                      BEGIN                                                                   04271600 T  0001:0
                      STREAM(MSG, MK, A:=TINU[U], MIX, B:=DSKADRS,                            04271800 T  0001:0
                             S:=IOQUE[S].[27:6], R, KEY1:=KEY1:=SPACE(10));                   04272000 T  0002:3
                         BEGIN                                                                04272200 T  0006:2
                         SI:=LOC MK; SI:=SI+7; DS:=CHR;                                       04272400 T  0006:2
                         SI:=SI+5; DS:=3CHR; DS:=LIT" ";                                      04272600 T  0007:1
                         CI:=CI+MSG;                                                          04272800 T  0008:1
                         GO L0; GO L1; GO L2; GO L3; GO L4; GO L5; GO L6; GO L7;              04273000 T  0008:3
                     L0: DS:= 9LIT"NOT READY";     GO TO MX;                                  04273200 T  0010:3
                     L1: DS:= 4LIT"BUSY";          GO TO MX;                                  04273400 T  0012:2
                     L2: DS:= 8LIT"I/O MEM ";                                                 04273600 T  0013:2
                     L3: DS:= 6LIT"PARITY";        GO TO MX;                                  04273800 T  0014:3
                     L4: DS:=12LIT"I/O INV ADDR"; GO TO MX;                                   04274000 T  0016:0
                     L5: DS:= 3LIT"EU ";           GO TO L0;                                  04274200 T  0018:0
                     L6: DS:=13LIT"INV DISK ADDR";GO TO MX;                                   04274400 T  0019:0
                     L7: DS:=10LIT"WRITE LOCK";                                               04274600 T  0021:1
                     MX: DS:= 6LIT", MIX="; DS:=2DEC;                                         04274800 T  0022:3
                         MSG:=DI; DI:=DI-2; DS:=FILL; DI:=MSG;                                04275000 T  0024:0
                         DS:=5LIT", DA="; DS:=8CHR;                                           04275200 T  0025:0
                         DS:=7LIT", SEGS="; DS:=2DEC;                                         04275400 T  0026:1
                         DS:=4LIT", R=";                                                      04275600 T  0027:3
                         16(DS:=3RESET; 3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));       04275800 T  0028:2
                         SI:=SI-5; DS:=5LIT", IO=";                                           04276000 T  0031:1
                         IF SB THEN DS:=2LIT"4,"; SKIP SB;                                    04276200 T  0032:2
                         IF SB THEN DS:=2LIT"3,"; SKIP SB;                                    04276400 T  0033:3
                         IF SB THEN DS:=2LIT"2,"; SKIP SB;                                    04276600 T  0035:0
                         IF SB THEN DS:=2LIT"1,";                                             04276800 T  0036:1
                         DI:=DI-1; DS:=LIT".";                                                04277000 T  0037:1
                         END STREAM STATEMENT;                                                04277200 T  0038:0
                                                                                                           04272200
                      END SUBROUTINE DISKMESSAGE;                                             04277400 T  0038:1
                                                                                                           04271600
                                                                                              04277600 T  0038:2
              SUBROUTINE DETAILRECORDENTRY;                                                   04277800 T  0038:2
                   BEGIN                                                                      04278000 T  0039:0
                   KEY2 := TYPEDSPACE(6,MAINTBUFFAREAV);%                       %167-         04278200 P  0039:0
                   M[KEY2] := 0 & RDCTABLE[U][18:1:2];                                        04278400 T  0041:1
                   IF MIX NEQ 0 THEN                                                          04278600 T  0044:0
                      BEGIN                                                                   04278800 T  0044:3
                      M[KEY2] := (*P(DUP)) & MIX[20:43:5] &                                   04279000 T  0045:1
                      (IF FINALQUE[S] LSS 0 THEN 0 ELSE                                       04279200 T  0047:2
                      (M[M[LOCATQUE[S] INX NOT 2] INX 4].[13:11] DIV ETRLNG)+1)[9:39:9];      04279400 T  0049:3
                      END;                                                                    04279600 T  0054:2
                                                                                                           04278800
```

```
M[KEY2+1] := TRANSACTION[U];                                                    04279800 T  0055:3
IF NOT DISC THEN                                                                04280000 T  0058:0
   BEGIN                                                                        04280200 T  0058:2
   STREAM(S:=IOD,[FF], D:=KEY2+2);                                              04280400 T  0059:0
      BEGIN                                                                     04280600 T  0061:0
      SI:=LOC S; DS:=8DEC;                                                      04280800 T  0061:0
      END;                                                                      04281000 T  0061:2
                                                                                                04280600
   END                                                                          04281200 T  0061:3
                                                                                                04280200
ELSE M[KEY2+2] := DSKADRS;                                                      04281400 T  0061:3
M[KEY2+3] := IOQUE[S];                                                          04281600 T  0064:1
M[KEY2+4] := R & RDCTABLE[U][3:3:5];                                            04281800 T  0066:2
M[KEY2+5] := IF FINALQUE[S] LSS 0 THEN 0 ELSE LOCATQUE[S] INX NOT 2;            04282000 T  0069:3
END DETAILRECORDENTRY;                                                          04282200 T  0075:0
                                                                                                04278000
                                                                                04282400 T  0075:1
SUBROUTINE FINISHDETAIL;                                                        04282600 T  0075:1
   BEGIN                                                                        04282800 T  0076:0
   IF MIX NEQ 0 THEN CHECKJOBORFILEMESS(MIX,M[KEY2+5],U);                       04283000 T  0076:0
   LINKUP(4+DISC,KEY2);                                                         04283200 T  0079:3
   END;                                                                         04283400 T  0081:1
                                                                                                04282800
                                                                                04283600 T  0081:2
P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0);                     04283800 T  0081:2
                                                                                04284000 T  0086:3
DISC:=(U:=LOCATQUE[S:=R.[3:5]],[12:6]).[46:1];                                  04284200 T  0086:3
MIX:=LOCATQUE[S].[3:5];                                                         04284400 T  0090:1
IF (OLAYIO := ((FINALQUE[S] LSS 0) AND (LOCATQUE[S].[9:1]))) THEN               04284600 T  0091:3
   BEGIN                                                                        04284800 T  0094:2
   STREAM(S:=0&FINALQUE[S][CTC]&FINALQUE[S][21:8:12], D:=[DSKADRS]);            04285000 T  0095:0
      BEGIN                                                                     04285200 T  0098:0
      SI:=LOC S; DS:=8DEC; % DISK ADDRESS IN FINALQUE FOR OLAY I/O              04285400 T  0098:0
      END;                                                                      04285600 T  0098:2
                                                                                                04285200
   END ELSE DSKADRS := M[IOQUE[S]];                                             04285800 T  0098:3
                                                                                                04284800
  MK:="*"; MSG:=(-1);                                                           04286000 T  0101:0
  R:=R&IOQUE[S][3:3:5]; % RESTORE HARDWARE UNIT TYPE                            04286200 T  0102:3
  IOD := IOQUE[S];                                                              04286400 T  0104:3
  IF DISC THEN                                                                  04286600 T  0105:3
     BEGIN                                                                      04286800 T  0106:0
     IF R.[30:1] THEN % DISK NOT READY                                          04287000 T  0106:2
        BEGIN                                                                   04287200 T  0107:1
$ SET OMIT = NOT(DFX)                                                           04287400 T  0107:3
        UNIT[U]:=(*P(DUP))&@77777[5:20:28];                                     04295400 T  0107:3
        MSG:=0; MK:="#"; % NOT READY                                            04295600 T  0110:1
        DISKMESSAGE;                                                            04295800 T  0111:3
        DETAILRECORDENTRY;                                                      04296000 T  0113:0
        READY   := NOT TWO(U) AND READY;                                        04296200 T  0114:0
        RRRMECH := NOT TWO(U) AND RRRMECH;                                      04296400 T  0116:0
        UNIT[U].[5:10] := 2;                                                    04296600 T  0118:0
        GO TO KILLL;                                                            04298800 T  0120:2
        END; % IF NOT READY                                                     04299000 T  0122:0
                                                                                                04287200
   LOCATQUE[S].[FF] := NOT 0;                                                   04299200 T  0122:0
  IF R.[26:7] NEQ 1 AND NOT OLAYIO THEN % NOT BUSY OR SPECIAL I/O               04299600 T  0124:1
```

```
      BEGIN                                                                                  04299800 T  0126:1
      PARITY := (IOD.[24:1] AND (R.[26:7]=16)); % PARITY CONDITION                           04300000 T  0126:3
      IF FINALQUE[S] GTR 0 THEN % OBJECT JOB ERROR                                           04300200 T  0129:2
         BEGIN                                                                               04300400 T  0130:2
         IF PARITY THEN GO TO START; % RECOVERABLE ERROR                                     04300500 T  0131:0
DSIT:    TERMINATE(MIX&20[CTF]);                                                             04300600 T  0132:0
         END % OBJECT ERROR                                                                  04301000 T  0133:1
                                                                                                          04300400
      ELSE                                                                                   04301200 T  0133:1
         BEGIN % MCP I/O                                                                     04301400 T  0133:1
         IF MIX NEQ 0 THEN                                                                   04301600 T  0133:3
               BEGIN                                                                         04302000 T  0134:2
               IF JAR[MIX,9].SYSJOBF THEN % "SYSTEM" JOB                                     04302200 T  0135:0
                     IF PARITY THEN GO TO START;                                             04302600 T  0136:2
               % DONT DS LIBMAIN/DISK ON PARITY ERROR                                        04302800 T  0138:0
               GO TO DSIT;                                                                   04303000 T  0138:0
               END; % NON-ZERO MIX                                                           04303200 T  0138:2
                                                                                                          04302000
         END; % MCP I/O                                                                      04303400 T  0138:2
                                                                                                          04301400
      END; % NOT BUSY OR SPECIAL I/O                                                         04303600 T  0138:2
                                                                                                          04299800
                                                                                             04303800 T  0138:2
START:                                                                                       04304000 T  0138:2
                                                                                             04304200 T  0138:2
      TRANSACTION[U] := TRANSACTION[U]-1;                                                    04304400 T  0138:2
      MASK := IF (FIN := FINALQUE[S]) LSS 0 THEN FIN.[25:8] ELSE @377;                       04304600 T  0140:2
      IF (E := R.[25:8] AND MASK) = 0 THEN % ERRORS ARE ACCETABLE                            04304800 T  0144:2
         BEGIN % FIX UP IOQUE                                                                04305000 T  0146:3
QUIT:                                                                                        04305200 T  0147:1
         IF MSG NEQ (-1) AND DISC THEN DISKMESSAGE;                                          04305400 T  0147:1
         DETAILRECORDENTRY;                                                                  04305600 T  0150:0
 % SET OMIT = NOT(AUXMEM);                                                                  04305800 T  0151:0
         RETURNIOSPACE(S);                                                                   04309200 T  0151:0
                                                                                                          04309200
                                                                                             04309400 T  0154:1
         FIN:=FINALQUE[S] AND NOT MEMORY;                                                    04309600 T  0154:1
         IF (T1:=FIN) LSS 0 THEN % MCP I/O                                                   04309800 T  0156:0
            BEGIN                                                                            04310000 T  0157:1
            IF NOT OLAY!0 THEN % I/O FINISH PLACES RESULT DESC. FOR OLAY                     04310200 T  0157:3
               M[LOCATQUE[S]]:=R&E[25:40:8]&IOD[3:3:5] OR IOMASK;                            04310400 T  0158:1
            END % IF MCP I/O                                                                 04310600 T  0163:0
                                                                                                          04310000
         ELSE                                                                                04310800 T  0163:0
            BEGIN                                                                            04311000 T  0163:0
            IF E NEQ 0 THEN % ERRORS                                                         04311200 T  0163:2
               BEGIN                                                                         04311400 T  0164:1
               P(.T1,PRL);                                                                   04311600 T  0164:3
               T1 := T1&E[25:40:8];                                                          04311800 T  0165:2
               END                                                                           04312000 T  0167:1
                                                                                                          04311400
            ELSE P(.T1,IOR);                                                                 04312200 T  0167:1
            LOCN := [M[LOCATQUE[S]]];                                                        04312400 T  0168:1
            IOD := IOD.[33:15];                                                              04312600 T  0169:3
            WHILE LOCN[0].[33:15] NEQ IOD DO LOCN := 1 INX LOCN;                             04312800 T  0171:0
            LOCN[0] := P(.T1,LOD);                                                           04313000 T  0174:2
            END;                                                                             04313200 T  0175:2
```

```
                                                                                    04311000
          GO TO KILLL;                                           04313600 T  0175:2
          END;                                                   04313800 T  0176:0
                                                                                    04305000
       IF E THEN % BUSY                                          04314000 T  0176:0
          BEGIN                                                  04314200 T  0176:1
          MSG:=1; % BUSY                                         04314400 T  0176:3
RETRY:                                                           04314600 T  0177:2
 $ SET OMIT = NOT(AUXMEM)                                        04314790 T  0177:2
          DISKMESSAGE;                                           04314820 T  0177:2
          DETAILRECORDENTRY;                                     04315000 T  0179:0
 $ SET OMIT = NOT(AUXMEM)                                        04315190 T  0180:0
          T1:=(IF DISC THEN IOQUE[S]&6[3:43:5] ELSE IOQUE[S]);   04315400 T  0180:0
          RETURNIOSPACE(S);                                      04315600 T  0183:3
                                                                                    04315600
                                                                 04315800 T  0187:0
          P1MIX:=MIX;                                            04316000 T  0187:0
          IF NOT OLAYIO THEN % RETRIES ARE OK                    04316400 T  0187:3
             IOREQUEST(FINALQUE[S], T1,                          04316600 T  0188:1
                      (IF DISC THEN LOCATQUE[S]&@22[12:42:6] ELSE  04316800 T  0189:3
                       LOCATQUE[S]));                            04317000 T  0192:2
          P1MIX:=0;                                              04317200 T  0193:1
          GO TO KILLER;                                          04317400 T  0194:0
          END; % IF BUSY                                         04317600 T  0194:2
                                                                                    04314200
       IF E.[46:1] THEN % I/O MEMORY PARITY                      04317800 T  0194:2
          BEGIN                                                  04318000 T  0195:1
          MSG:=2;                                                04318200 T  0195:3
          E:=@1537;                                              04318400 T  0196:2
          GO TO QUIT;                                            04318600 T  0197:1
          END;                                                   04318800 T  0197:3
                                                                                    04318000
       IF E.[41:1] THEN % INVALID ADDRESS                        04319000 T  0197:3
          BEGIN                                                  04319200 T  0198:2
          MSG:=4;                                                04319400 T  0199:0
          E:=@1537;                                              04319600 T  0199:3
          GO TO QUIT;                                            04319800 T  0200:2
          END;                                                   04320000 T  0201:0
                                                                                    04319200
 $ SET OMIT = NOT(SHAREDISK)                                     04320200 T  0201:0
       IF NOT E.[43:1] THEN % NOT PARITY,CHECK DISK ADDRESS      04325400 T  0201:0
          BEGIN                                                  04325600 T  0202:0
          STREAM(DA:=MASK:=DSKADRS : EU:=MASK.[6:6], A:=0,       04325800 T  0202:2
          EUA:=[MULTITABLE[16+2×MASK.[5:1]]]);                   04326000 T  0204:3
             BEGIN                                               04326200 T  0207:0
             SI:=LOC DA;                                         04326400 T  0207:0
             IF SC GTR "1" THEN GO TO BAD;                       04326600 T  0207:1
             IF SC LSS "0" THEN GO TO BAD;                       04326800 T  0208:0
 $ SET OMIT = SHAREDISK                                          04327000 T  0208:3
             7(                                                  04327200 T  0208:3
 $ POP OMIT                                                      04327400 T  0209:0
 $ SET OMIT = NOT(SHAREDISK)                                     04327600 T  0209:0
             IF SC LSS "0" THEN JUMP OUT TO BAD; SI:=SI+1;       04328200 T  0209:0
             IF SC GTR "9" THEN JUMP OUT TO BAD));               04328400 T  0210:1
 $ SET OMIT = SHAREDISK                                          04328600 T  0211:2
             SI:=SI-5;                                           04328800 T  0211:2
 $ POP OMIT                                                      04329000 T  0211:3
```

```
 $ SET OMIT = NOT(SHAREDISK)
            DI:=LOC DA; DS:=2 OCT;                                          04329200 T  0211:3
            SI:=EUA; SI:=SI+14; SKIP EU SB;                                 04329800 T  0211:3
            DI:=LOC A; DI:=DI+7; SKIP 2 DB;                                 04330000 T  0212:1
            IF SB THEN SKIP DB;                                             04330200 T  0213:1
            SI:=LOC DA; SI:=SI+6;                                           04330400 T  0214:0
            IF SC NEQ "0" THEN GO TO BAD; SI:=SI+1;                         04330600 T  0214:3
            4(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB);                  04330800 T  0215:1
            SI:=LOC A; SI:=SI+7; IF SC GTR "4" THEN GO BAD;                 04331000 T  0216:1
            IF SC LSS "0" THEN GO BAD;                                      04331200 T  0218:1
            SI:=EUA; SI:=SI+EU; SKIP SB; SKIP A SB;                         04331400 T  0219:2
            IF SB THEN GO TO OK;                                            04331600 T  0220:1
BAD:        TALLY:=1;                                                       04331800 T  0221:3
OK:         DA:=TALLY;                                                      04332000 T  0222:2
            END;                                                            04332200 T  0222:3
                                                                            04332400 T  0223:0
                                                                                        04326200
         IF (MASK:=P) OR E.[42:1] THEN % BAD ADDRESS OR EU NOT READY        04332600 T  0223:1
            BEGIN                                                           04332800 T  0224:3
            MSG:=5+MASK; % 5=EU NOT READY, 6=INVALID DISK ADDRESS           04333000 T  0225:1
            IF NOT MASK THEN MK:="#";                                       04333200 T  0226:2
            IF (MIX NEQ 0) OR OLAYIO THEN                                   04333400 T  0228:1
               BEGIN                                                        04333600 T  0229:2
               E:=@1537; GO TO QUIT;                                        04333800 T  0230:0
               END;                                                         04334000 T  0231:1
                                                                                        04333600
            DISKMESSAGE;                                                    04334200 T  0231:1
            DETAILRECORDENTRY;                                              04334400 T  0232:0
            GO TO KILLER; % LET IT HANG                                     04334600 T  0233:0
            END                                                             04334800 T  0233:2
                                                                                        04332800
            ELSE                                                            04335000 T  0233:2
               BEGIN % MUST BE E.[44:1], MEM.PAR.                           04335200 T  0233:2
               MSG:=2; E:=@1537; GO TO QUIT;                                04335400 T  0234:0
               END;                                                         04335600 T  0236:0
                                                                                        04335200
            END; % IF NOT PARITY                                            04335800 T  0236:0
                                                                                        04325600
         IF IOQUE[S].[24:1] THEN % DISK PARITY ON READ                      04336000 T  0236:0
            BEGIN                                                           04336200 T  0237:0
            MSG:=3; % PARITY                                                04336400 T  0237:2
            E:=@20;                                                         04336600 T  0238:1
            GO TO QUIT;                                                     04336800 T  0239:0
            END;                                                            04337000 T  0239:2
                                                                                        04336200
         MSG:=7; % WRITE LOCK                                               04337200 T  0239:2
         E:=@1537;                                                          04337400 T  0240:1
         GO TO QUIT;                                                        04337600 T  0241:0
         END; % IF DISK                                                     04337800 T  0241:2
                                                                                        04286800
 $ SET OMIT = NOT(AUXMEM)                                                   04338000 T  0241:2
KILLL:                                                                      04338200 T  0241:2
   LOCATQUE[S].[11:1]:=0;                                                   04351600 T  0241:2
KILLER:                                                                     04351800 T  0241:2
   IF KEY1 NEQ 0 THEN SPOUTER(KEY1,UNITNO,35);                              04352000 T  0244:0
   IF KEY2 NEQ 0 THEN FINISHDETAIL;                                         04352200 T  0244:0
   IF TERMNATE THEN TERMINATE(MIX&20[CTF]);                                 04352400 T  0246:3
                                                                            04352600 T  0249:0
```

```
KILL([MSCW]);
END PROCEDURE DISKORAUXERROR;
```

```
04352800 T  0251:0
04353000 T  0251:3
                    04256400
          SIZE= 0252 WORDS
```

```
                PROCEDURE ACTUALIOERR(R); VALUE R; REAL R;

                  BEGIN
                  REAL      MSCW      = -2,
STACK(F-2) = MSCW
                            E         = +1,
STACK(F+1) = E
                            T         = +2,
STACK(F+2) = T
                            S         = +3,
STACK(F+3) = S
                            F         = +4,
STACK(F+4) = F
                            U         = +5,
STACK(F+5) = U
                            T1        = +6,
STACK(F+6) = T1
                            T2        = +7,
STACK(F+7) = T2
                            T3        = +8,
STACK(F+10) = T3
                            KEY       = +9,
STACK(F+11) = KEY
                            FIN       = NT3,
PRT(162) = FIN
                            IOD       = NT6,
PRT(165) = IOD
                            MASK      = +10,
STACK(F+12) = MASK
                            DISC      = +11,
STACK(F+13) = DISC
                            TYPE      = +12,
STACK(F+14) = TYPE
                            MIX       = +13;
STACK(F+15) = MIX

                    NAME      LOCN = T3;
STACK(F+10) = LOCN
                  $ SET OMIT = NOT(PACKETS)
                    DEFINE UNITNO = PSEUDOMIX[MIX]#;
                  $ POP OMIT

                    LABEL L1, L2, D17, D19, D22, START, NOTREADYMESS, NTRDY,
                          EOF, REALEOF, TAPERETRY, SIX, SEVEN, FIX, LEAVE,
                          REWINDING, NOCODE, CLEAR, KILLL, KILLER;
                    LABEL READER, PRINTER, TAPE, DRUM, DISK, SPO, PUNCH,
                          PAPERPUNCH, PAPER, DATACOM;

                    SWITCH W := READER,PRINTER,TAPE,DRUM,DISK,SPO,PUNCH,NOCODE,
                                PAPERPUNCH,PAPER,DATACOM;

                    SUBROUTINE MAKEMESS;
                       BEGIN
                       STREAM(S1:=F.[43:5], S2:=F.[38:5], A:=TINU[U],
                              MX<-MIX, KEY<-KEY<-SPACE(10));
                          BEGIN
                          S1:=LOC A; S1:=S1+5;
```

```
                                                04353200 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00060      04353400 T  0000:0
                                                04353600 T  0000:0
                                                04353800 T  0000:0
                                                04354000 T  0000:0
                                                04354200 T  0000:0
                                                04354400 T  0000:0
                                                04354600 T  0000:0
                                                04354800 T  0000:0
                                                04355000 T  0000:0
                                                04355200 T  0000:0
                                                04355400 T  0000:0
                                                04355600 T  0000:0
                                                04355800 T  0000:0
                                                04356000 T  0000:0
                                                04356200 T  0000:0
                                                04356400 T  0000:0
                                                04356500 T  0000:0
                                                04356600 T  0000:0
                                                04356800 T  0000:0
                                                04356899 T  0000:0
                                                04356900 T  0000:0
                                                04356901 T  0000:0
                                                04357000 T  0000:0
                                                04357200 T  0000:0
                                                04357400 T  0000:0
                                                04357600 T  0000:0
                                                04357800 T  0000:0
                                                04358000 T  0000:0
                                                04358200 T  0000:0
                                                04358400 T  0000:0
                                                04358600 T  0000:0
                                                04358800 T  0000:0
                                                04359000 T  0000:0
                                                04359200 T  0001:0
                                                04359400 T  0001:0
                                                04359600 T  0003:1
                                                04359800 T  0006:0
                                                04360000 T  0006:0
```

```
        DS:=LIT"*"; DS:=3 CHR; DS:=LIT" ";                                                  04360200 T  0006:2
        CI:=CI+S1; GO TO LL;                                                                04360400 T  0007:3
        GO L1; GO L2; GO L3; GO L4; GO L5; GO L6; GO LL; GO LL;                             04360600 T  0008:2
        DS:=19 LIT"BLANK TAPE ON WRITE";   GO TO MXX;                                       04360800 T  0010:2
L1:     DS:= 4 LIT"BUSY";                  GO TO MXX;                                       04361000 T  0013:2
L2:     DS:= 8 LIT"I/O MEM ";                                                               04361200 T  0014:2
L3:     DS:= 6 LIT"PARITY";                GO TO MXX;                                       04361400 T  0015:3
L4:     DS:=12 LIT"I/O INV ADDR";          GO TO MXX;                                       04361600 T  0017:0
L5:     DS:= 9 LIT"I/O ERROR";             GO TO MXX;                                       04361800 T  0019:0
L6:     DS:=10 LIT"WRITE LOCK";            GO TO MXX;                                       04362000 T  0020:3
LL:     GO TO PS;                                                                           04362200 T  0022:2
MXX:    GO TO MIXIT;                                                                        04362400 T  0022:3
PS:     DI:=DI-5; DS:=LIT"#"; DI:=DI+4;                                                     04362600 T  0023:0
        CI:=CI+S2; GO TO LL0; GO TO LL1; GO TO LL2;                                         04362800 T  0024:0
NR:     DS:= 9 LIT"NOT READY";             GO TO MIXIT;                                     04363000 T  0025:1
LL0:    DS:= 5 LIT"PRINT";                 GO TO CHK;                                       04363200 T  0027:0
LL1:    DS:= 4 LIT"READ";                  GO TO CHK;                                       04363400 T  0028:1
LL2:    DS:= 5 LIT"PUNCH";                                                                  04363600 T  0029:1
CHK:    DS:= 5 LIT"CHECK";                                                                  04363800 T  0030:1
MIXIT:  DS:= 6 LIT", MIX="; DS:=2 DEC; DS:=LIT"+";                                          04364000 T  0031:1
        DI:=DI-3; DS:=FILL;                                                                 04364200 T  0033:0
        END;                                                                                04364400 T  0033:2
                                                                                                        04359800
    END OF MAKEMESS;                                                                        04364600 T  0033:3
                                                                                                        04359200
                                                                                            04364800 T  0034:0
SUBROUTINE DETAILRECORDENTRY;                                                               04365000 T  0034:0
  BEGIN                                                                                     04365200 T  0034:0
  KEY := TYPEDSPACE(ABS(T2),MAINTBUFFAREAV);%                                    %167-      04365400 P  0034:0
  M[KEY] := (ABS(T2) DIV 5 -1) & RDCTABLE[U][18:1:2];                                       04365600 T  0036:2
  IF MIX NEQ 0 THEN                                                                         04365800 T  0040:2
     BEGIN                                                                                  04366000 T  0041:1
     M[KEY] + (*P(DUP)) & MIX[20:43:5] &                                                    04366200 T  0041:3
     (IF FINALQUE[S] LSS 0 THEN 0 ELSE                                                      04366400 T  0044:0
     (M[M[LOCATQUE[S] INX NOT 2] INX 4],[13:11] DIV ETRLNG)+1)[9:39:9];                      04366600 T  0046:1
     CHECKJOBORFILEMESS(MIX,                                                                04366800 T  0051:0
     (IF FINALQUE[S] LSS 0 THEN 0 ELSE LOCATQUE[S] INX NOT 2),                              04367000 T  0052:3
     U);                                                                                    04367200 T  0056:1
     END;                                                                                   04367400 T  0056:3
                                                                                                        04366000
  M[KEY+1] := TRANSACTION[U];                                                               04367600 T  0056:3
  M[KEY+2]:=IF TYPE=2 THEN RDCTABLE[U] & U[3:43:5] ELSE 0;                                  04367800 T  0059:0
  M[KEY+3] := IOQUE[S];                                                                     04368000 T  0064:1
  M[KEY+4] := R & RDCTABLE[U][3:3:5];                                                       04368200 T  0066:2
  IF TYPE=2 THEN                                                                            04368400 T  0069:3
     BEGIN                                                                                  04368600 T  0070:2
     M[KEY+5] := MULTITABLE[U];                                                             04368800 T  0071:0
     M[KEY+6] := LABELTABLE[U];                                                             04369000 T  0073:1
     M[KEY+7] := PRNTABLE[U];                                                               04369200 T  0075:2
     M[KEY+8] := 0;                                                                         04369400 T  0077:3
     M[KEY+9] := 16;                                                                        04369600 T  0079:3
     END;                                                                                   04369800 T  0081:3
                                                                                                        04368600
  IF T2  GTR  0 THEN LINKUP(TYPE+1,KEY);                                                    04370000 T  0081:3
  END DETAILRECORDENTRY;                                                                    04370200 T  0084:2
                                                                                                        04365200
                                                                                            04370400 T  0084:3
```

```
   DEFINE MAKEMLOG(MAKEMLOG1) =                                                    04370600 T  008#3
      BEGIN                                                                        04370800 T  008#3
      T2#=MAKEMLOG1# DETAILRECORDENTRY#                                            04371000 T  008#3
      END#)#                                                                       04371200 T  008#3
                                                                                   04371400 T  008#3
   P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)#                                       04371600 T  008#3
                                                                                   04371800 T  008#1
 $ SET OMIT = DATACOM                                                              04371900 T  008#1
%  THIS CODE WAS PLACED HERE FROM OUTER BLOCK TO AVOID CAUSING                     04371910 T  008#1
   IF R=0     %  OVERFLOW OF INTERRUPT STACK                                      04371920 T  008#1
     THEN BEGIN STREAM(B#=T#=SPACE(10))#                                         04371930 T  008#3
                DS#=42LIT"#DATACOM/INQUIRY INTERRUPT IGNORED BY MCP←"#           04371940 T  009#1
                SPOUT(T)#                                                        04371950 T  009#0
                GO KILLER#                                                       04371955 T  009#1
          END#                                                                   04371960 T  009#3
                                                                                                04371930
 $ POP OMIT                                                                        04371970 T  009#3
   U#=LOCATQUE[S#=R.[3#5]].[12#6]#                                                 04372000 T  009#3
   MIX←LOCATQUE[S].[3#5]#                                                          04372050 T  010#1
   R#=R&IOQUE[S][3#43#5]#     % RESTORE UNIT DESIGNATE                             04372100 T  010#3
START#                                                                             04372200 T  010#3
   T#=UNIT[U]&0[13#13#2]#                                                          04372400 T  010#3
   TRANSACTION[U] #= TRANSACTION[U]-1#                                             04372600 T  010#3
   TYPE #= T.[1#4]#                                                                04372800 T  010#3
   MASK#=IF (T2#=FINALQUE[S]) LSS 0 THEN T2.[25#8] ELSE @377#                      04373000 T  011#0
   IF (F#=T.[5#8] AND MASK) = 0 THEN              % ACCEPTBLE                      04373200 T  011#0
      BEGIN                                                                        04373400 T  011#1
      F#=1# % RETAIN ERROR FIELD                                                   04373600 T  011#3
      GO TO FIX#                                                                   04373800 T  011#2
      END#                                                                         04374000 T  011#0
                                                                                                04373400
   IF E THEN                                      % BUSY                          04374200 T  011#0
      BEGIN                                                                        04374400 T  011#1
      T3#=1 & (U=30)[43#47#1]# % BUSY/INCOMPLETE MASK                              04374600 T  011#3
      IF U LSS 16 AND TRANSACTION[U] LEQ 0 THEN                                    04374800 T  012#0
         BEGIN                                                                     04375000 T  012#0
         P(0)# % DONT SPOUT MESSAGE                                                04375200 T  012#2
         GO TO REWINDING#                                                          04375400 T  012#3
         END#                                                                      04375600 T  012#1
                                                                                                04375000
      IF U NEQ 25 THEN % NOT SPO                                                   04375800 T  012#1
         BEGIN                                                                     04376000 T  012#0
         F#=1# % BUSY                                                              04376200 T  012#2
         MAKEMESS#                                                                 04376400 T  012#1
         SPOUTER(KEY,UNITNO,35)#                                                   04376600 T  012#0
         END#                                                                      04376800 T  012#2
                                                                                                04376000
      MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5)#                                          04377000 T  012#2
                                                                                                04377000
L1#      DO BEGIN                                                                  04377200 T  013#0
         SLEEP([CLOCK],NOT CLOCK)#                                                 04377400 T  013#0
         UNIT[U]#=(*P(DUP))&P(T,XCH)[CTC]#                                         04377600 T  013#3
         STARTIO(U)#                                                               04377800 T  013#0
         SLEEP([UNIT[U]],@100000000000)#                                           04378000 T  013#3
         TRANSACTION[U] #= TRANSACTION[U]-1#                                       04378200 T  013#2
         END UNTIL (UNIT[U].[5#8] AND T3) = 0#                                     04378400 T  014#2
                                                                                                04377200
```

```
      TRANSACTION[U] := TRANSACTION[U]+1;                                    04378600 T  0144:0
      IF (UNIT[U].[5:8] AND MASK) = 0 THEN GO TO CLEAR;                      04378800 T  0146:0
      GO TO START;                                                           04379000 T  0148:2
      END;                                                                   04379200 T  0150:0
                                                                                      04374400
   IF E.[45:1] THEN                                  % NOT READY            04379400 T  0150:0
      BEGIN                                                                  04379600 T  0150:0
      IF E.[43:1] THEN                                                       04379800 T  0150:3
         BEGIN                                                               04380000 T  0151:1
         IF TYPE=0 THEN GO TO READER;  % READ CHECK                          04380200 T  0152:0
         IF TYPE=1 THEN GO TO PRINTER; % PRINT CHECK                         04380400 T  0152:2
         IF TYPE=6 THEN GO TO PUNCH;   % PUNCH CHECK                        04380600 T  0153:3
         END;                                                                04380800 T  0155:0
                                                                             04381000 T  0156:1
      IF U NEQ 25 THEN % NOT SPO.                                                     04380200
         BEGIN                                                               04381200 T  0156:1
NOTREADYMESS:                                                                04381400 T  0157:0
         F:=96; % NOT READY                                                  04381600 T  0157:2
         MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                                 04381800 T  0157:2
                                                                             04382000 T  0158:1
         MAKEMESS;                                                                   04382000
         P(1); % SPOUT MESSAGE                                               04382200 T  0162:0
REWINDING:                                                                   04382400 T  0163:0
         READY := NOT TWO(U) AND READY;                                      04382600 T  0163:1
NTRDY:                                                                       04382800 T  0163:1
         RRRMECH:=NOT TWO(U) AND RRRMECH;                                    04383000 T  0165:1
         IF P THEN SPOUTER(KEY,UNITNO,35);                                   04383200 T  0165:1
         END;                                                                04383400 T  0167:1
                                                                             04383600 T  0169:1
                                                                                      04381400
      UNIT[U].[5:10] := 2;                                                   04383800 T  0169:1
    RRRMECH + NOT TWO(U) AND RRRMECH; % LET STATUS FIND IT          %115=    04383900 C  0171:3
      GO TO KILLL;                                                           04385400 T  0173:3
      END;                                                                   04385600 T  0174:1
                                                                                      04379800
D17:                                                                         04385800 T  0174:1
   IF E.[46:1] THEN                                % I/O MEMORY PARITY      04386000 T  0174:1
      BEGIN                                                                  04386200 T  0175:0
      F:=2; % I/O MEM PARITY                                                 04386400 T  0175:2
L2:   MAKEMESS;                                                              04386600 T  0176:1
      SPOUTER(KEY,UNITNO,35);                                                04386800 T  0177:0
      MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                                    04387000 T  0178:2
                                                                                      04387000
      P(@1537); % ACCEPT EOF/EOT/EOP                                         04387200 T  0182:0
      GO TO SIX;                                                             04387400 T  0182:1
      END;                                                                   04387600 T  0182:3
                                                                                      04386200
   IF E.[41:1] AND TYPE NEQ 2 THEN                 % I/O INVALID ADDRESS    04387800 T  0182:3
      BEGIN % [41:1] FOR TAPE = BACKWORD DRIVE                               04388000 T  0184:2
D22:  F:=4; % I/O INVALID ADDRESS                                            04388200 T  0185:0
      GO TO L2;                                                              04388400 T  0185:3
      END;                                                                   04388600 T  0186:1
                                                                                      04388000
                                                                             04388800 T  0186:1
   GO TO W[TYPE];                                                            04389000 T  0186:1
                                                                             04389200 T  0192:3
D19:  E := 1023; GO TO D17;                                                  04389400 T  0192:3
```

```
SPO:
   IF E.[43:1] THEN GO TO L1; % ERROR BUTTON                                                                  04389600 T  019:0
   GO TO D19;                                                                                                 04389800 T  019:0

PRINTER:                                                                                                      04390000 T  019:0
   IF F.[42:1] THEN % END OF PAGE                                                                             04390200 T  019:2
      BEGIN                                                                                                   04390400 T  019:0
      IF IOQUE[S].[27:6]=0 THEN GO FIX; % NOT SPACING                                                         04390600 T  019:0
      COMMENT IGNORE EOP IF NO SPACE OR SKIP;                                                                 04390800 T  019:0
           IF RDCTABLE[U] OR MULTITABLE[U]="FULLPGE"                                  %724-                   04391000 T  019:3
           THEN IF IOQUE[S].[28:1] THEN IOQUE[S].[FF]←@40013 %DBL-CH 11                                       04391200 T  019:1
           ELSE IOQUE[S].[FF]←@40012  % DBL     SINGLE - SKIP TO CH 10                                     04391400 T  019:1
           ELSE % SKIP TO CHAN 1 ON EOP IF NOT 66 LINES                %724-                               04391550 C  019:1
      IOQUE[S].[18:15] := @40001; % INHIBIT DATA XFER, SKIP TO CHANNEL                                         04391560 C  020:2
      GO TO CLEAR;                                                                                            04391570 C  020:1
      END;                                                                                                    04391580 C  020:1
                                                                                                              04391600 T  021:0
   IF E.[43:1] THEN                                                                                           04391800 T  021:0
      BEGIN                                                                                                   04392000 T  021:0
      F:=0; % PRINT CHECK                                                                                                      04391000
      MAKEMESS;                                                                                               04392200 T  021:0
      SPOUTER(KEY,UNITNO,35);                                                                                 04392400 T  021:3
      IF E.[45:1] THEN GO TO NOTREADYMESS; % PRINTER NOT READY                                                04392600 T  021:1
      MAKEMLOG(IF TYPE=2 THEN 10 ELSE 5);                                                                     04392800 T  021:0
                                                                                                              04393000 T  021:0
      P(0); % CLEAR ERROR FIELD                                                                               04393200 T  022:2
      T.NU[U].[18:12] := P(DUP).[18:12]+1;                                                                    04393400 T  022:0
      GO TO SIX;                                                                                                               04393400
      END;                                                                                                    04393600 T  022:0
                                                                                                              04393800 T  022:1
   GO TO D19; % PARITY                                                                                        04394000 T  022:3
                                                                                                              04394200 T  023:1
READER:                                                                                                                        04392400
   IF E.[43:1] THEN % READ CHECK                                                                              04394400 T  023:1
      BEGIN                                                                                                   04394600 T  023:3
      T.NU[U].[18:12] := P(DUP).[18:12]+1;                                                                    04394800 T  023:3
      F:=32; % READ CHECK                                                                                     04395000 T  023:3
      MAKEMLOG(5);                                                                                            04395200 T  023:2
                                                                                                              04395400 T  023:0
      MAKEMESS;                                                                                               04395600 T  023:2
      P(1); % SPOUT MESSAGE                                                                                   04395800 T  023:1
      GO TO NTRDY;                                                                                                             04395800
      END;                                                                                                    04396000 T  023:0
                                                                                                              04396200 T  023:0
   IF E.[42:1] THEN % EOF CARD READER-TREAT AS NOT READY                                                      04396400 T  023:1
      BEGIN                                                                                                   04396600 T  023:3
      UNIT[U].[5:8] := 4; % ERROR FIELD=NOT READY                                                                              04395200
      R.[25:8] := 4;       % RESLT,DESC,=NOT READY                                                           04396800 T  023:3
      TRANSACTION[U] := TRANSACTION[U]+1;                                                                     04397000 T  024:2
      GO TO START;                                                                                            04397200 T  024:0
      END;                                                                                                    04397400 T  024:2
                                                                                                              04397600 T  024:1
   COMMENT MUST BE D19 - USUALLY INVALID CHARACTOR;                                                           04397800 T  024:1
   STREAM(A:=0 ! B:=IOQUE[S]);                                                                                04398000 T  024:3
      BEGIN                                                                                                                    04397000
      D. := A; S. := B; D. := D.+8;                                                                           04398200 T  024:3
                                                                                                              04398400 T  024:3
                                                                                                              04398600 T  024:1
                                                                                                              04398800 T  024:1
```

```
            IF SC = @14 THEN A := DI;
            2(40(DI:=DI+8; SI:= SI+1;
            IF SC = @14 THEN JUMP OUT 2 TO L);
            DI := DI-8; SI := SI-1;));
            DI := A;
L:          A := DI;
            END;

         IF (T1 := P) = 0 THEN GO TO D19; % NOT INVALID CHARACTER
         IF T1  NEQ  1 THEN               % NOT IN COLUMN 1
            BEGIN
            STREAM(A:=TINU[U],T1,KEY:=KEY:=SPACE(10));
               BEGIN
               DS := LIT "#"; SI := LOC A; SI := SI+5;
               DS := 3 CHR;
               DS := 16 LIT " INV CHR IN COL ";
               DS := 2 DEC; DS := LIT "+";
               END;

            P(1); % SPOUT MESSAGE
            GO TO NTRDY;
            END;

         E := @40;
         F := @3100001;
         GO TO LEAVE;

PUNCH:
         IF E.[43:1] THEN
            BEGIN
            F:=64; % PUNCH CHECK
            MAKEMESS;
            SPOUTER(KEY,UNITNO,35);
            % NEW PUNCH DOES NOT GO NOT-READY ON PUNCH CHECK
            IF E.[45:1] THEN GO TO NOTREADYMESS; % NOT READY
            MAKEMLOG(5);

            TINU[U].[18:12]:=P(DUP).[18:12]+1;
            F:=0; % ZERO ERROR FIELD
            GO TO CLEAR;
            END;

         GO TO D19; % PARITY

PAPERPUNCH:
         IF R.[27:1] THEN % EOR
            BEGIN
            P(@40);
            GO TO SIX;
            END;

         GO TO D19; % PARITY

PAPER:
         IF R.[27:2] NEQ 0 THEN GO TO EOF; % BOT/EOT
         IF E.[44:1] THEN % PARITY
            BEGIN
```

```
04399000 T  0250:0
04399200 T  0250:3
04399400 T  0251:3
04399600 T  0253:1
04399800 T  0254:0
04400000 T  0254:1
04400200 T  0254:2
                    04398600
04400400 T  0254:3
04400600 T  0256:1
04400800 T  0257:0
04401000 T  0257:2
04401200 T  0261:0
04401400 T  0261:0
04401600 T  0262:0
04401800 T  0262:1
04402000 T  0264:2
04402200 T  0265:1
                    04401200
04402400 T  0265:2
04402600 T  0265:3
04402800 T  0266:1
                    04400800
04403000 T  0266:1
04403200 T  0267:0
04403400 T  0267:3
04403600 T  0270:0
04403800 T  0270:0
04404000 T  0270:0
04404200 T  0270:3
04404400 T  0271:1
04404600 T  0272:0
04404800 T  0273:0
04405000 T  0274:2
04405200 T  0274:2
04405400 T  0276:0
                    04405400
04405600 T  0278:0
04405800 T  0281:2
04406000 T  0282:1
04406200 T  0282:3
                    04404200
04406400 T  0282:3
04406600 T  0283:1
04406800 T  0283:1
04407000 T  0283:1
04407200 T  0284:0
04407400 T  0284:2
04407600 T  0284:3
04407800 T  0285:1
                    04407200
04408000 T  0285:1
04408200 T  0285:3
04408400 T  0285:3
04408600 T  0285:3
04408800 T  0287:2
04409000 T  0288:1
```

```
      P(@20);
      GO TO SIX;
      END;

   GO TO NOCODE;

DATACOM:
   IF(T3:=1&F[43:43:1])=@21 THEN GO TO L1;
NOCODE:
   F := 5; % I/O ERROR
   GO TO L2;

DRUM: % DRUM NOW HANDLED IN DISKORAUXERROR
DISK: % DISK NOW HANDLED IN DISKORAUXERROR
   DO UNTIL FALSE;

TAPE:
   TRANSACTION[U] := TRANSACTION[U]+1;
   IF F.[44:1] THEN
      IF R.[2:1] THEN % MOD III DESCRIPTOR
         BEGIN % COULD BE MEM.PAR,,BLANK TAPE,BOT,EOT
         IF R.[11:1] THEN GO TO D19; % MEMORY PARITY
         OPTION:=OPTION OR M; % MEANS MOD3IOS:=TRUE
         IF R.[24:1] THEN % READING
            BEGIN
            IF R.[13:1] THEN R.[27:1]:=1; % BOT, SET EOF
            IF R.[14:1] THEN % EOT
               IF (F AND @367)=0 THEN % PARITY
                  IF R.[27:1]=0 THEN % NOT EOF
                     GO TO FIX; % FINISH I/O
            END

         ELSE
            BEGIN % WRITING
            IF R.[12:1] THEN % BLANK TAPE ON WRITE
               BEGIN
               F:=9; % BLANK TAPE ON WRITE
               MAKEMESS;
               SPOUTER(KEY,UNIT NO,35);
               MAKEMLOG(10);

               P(16);
               GO TO SIX;
               END;

            IF R.[14:1] THEN R.[27:1]:=1 ELSE GO FIX; % EOT,SET EOF BIT
            END;

         END % MOD III DESCRIPTOR

      ELSE GO TO D19;     % PARITY
   IF R.[24:1] THEN
      BEGIN
      IF E.[41:1] THEN GO TO D22; % INVALID ADDRESS
      IF R.[27:1] THEN % EOT
EOF:     IF MASK.[42:1] THEN % EOF OK
            BEGIN
```

```
04409200 T  0288:3
04409400 T  0289:0
04409600 T  0289:2
                    04409000
04409800 T  0289:2
04410000 T  0290:0
04410200 T  0290:0
04410400 T  0290:0
04410600 T  0292:3
04410800 T  0292:3
04411000 T  0293:2
04411200 T  0294:0
04411400 T  0294:0
04411600 T  0294:0
04411800 T  0294:0
04412000 T  0294:3
04412200 T  0294:3
04412400 T  0294:3
04412600 T  0296:3
04412800 T  0297:2
04413000 T  0298:3
04413200 T  0299:1
04413400 T  0300:3
04413600 T  0302:0
04413800 T  0302:3
04414000 T  0303:1
04414200 T  0306:1
04414400 T  0307:0
04414600 T  0308:3
04414800 T  0310:2
04415000 T  0311:0
                    04413800
04415200 T  0311:0
04415400 T  0311:0
04415600 T  0311:2
04415800 T  0312:1
04416000 T  0312:3
04416200 T  0313:2
04416400 T  0315:0
04416600 T  0316:2
                    04416600
04416800 T  0318:0
04417000 T  0318:1
04417200 T  0318:3
                    04415800
04417400 T  0318:3
04417600 T  0321:3
                    04415400
04417800 T  0321:3
                    04413000
04418000 T  0321:3
04418200 T  0321:3
04418400 T  0322:2
04418600 T  0323:0
04418800 T  0324:2
04419000 T  0325:1
04419200 T  0326:2
```

```
REALEOF:    F:=1&(IF R.[24:1] THEN @31 ELSE 0)[CTF];                                  04419400 T  0327:0
            T.[5:8] := @40;                                                           04419600 T  0330:1
            GO TO FIX;                                                                04419800 T  0332:0
            END                                                                       04420000 T  0332:2
                                                                                                  04419200
         ELSE                                                                         04420200 T  0332:2
            BEGIN % EOF NOT ACCEPTABLE                                                04420400 T  0332:2
            P(@40);                                                                   04420600 T  0333:0
            GO TO SIX;                                                                04420800 T  0333:1
            END;                                                                      04421000 T  0333:3
                                                                                                  04420400
TAPERETRY:                                                                           04421200 T  0333:3
      MAKEMLOG(-TAPEBUFFERSIZE);                                                     04421400 T  0333:3
                                                                                                  04421400
      IF (T:=TAPEPARITYRETRY(R,U,KEY)).[5:8]=32 AND                                  04421600 T  0336:0
      LOCATQUE[S].[3:5] NEQ 0 THEN GO TO REALEOF;                                    04421800 T  0338:3
      U←IOQUE[T.[FF]].[3:4];                                                         04421900 T  0341:1
      P(T.[5:8]);                                                                    04422000 T  0343:1
      GO TO SIX;                                                                     04422200 T  0344:0
      END;                                                                           04422400 T  0344:2
                                                                                                  04418400
   IF E.[41:1] THEN % WRITE RING                                                     04422600 T  0344:2
      IF E.[43:1] THEN % PARITY,WRITE RING                                           04422800 T  0345:1
         BEGIN                                                                       04423000 T  0346:2
         F:=6; % WRITE LOCK                                                          04423200 T  0347:0
         GO TO L2;                                                                   04423400 T  0347:3
         END                                                                         04423600 T  0348:1
                                                                                                  04423000
      ELSE GO TO D22; % INVALID ADDRESS                                              04423800 T  0348:1
   IF E.[43:1] THEN GO TO TAPERETRY; % PARITY,WRITE RING ONLY                        04424000 T  0348:1
   P(@40);                                                                           04424200 T  0349:3
SIX:                                                                                 04424400 T  0350:0
   T    := T&P(XCH)[5:40:8];                                                         04424600 T  0350:0
   F    := 1;                                                                        04424800 T  0351:3
FIX:                                                                                 04425000 T  0352:2
   E    := T.[5:8]×F;                                                                04425200 T  0352:2
   FIN  := S;                                                                        04425400 T  0354:1
   IOD  := IOQUE[S];                                                                 04425600 T  0355:0
SEVEN:                                                                               04425800 T  0356:0
   RETURN(OSPACE(S));                                                                04426000 T  0356:0
                                                                                                  04426000
                                                                                     04426200 T  0359:1
   T.[FF]:=S:=LOCATQUE[S].[FF];                                                      04426600 T  0359:1
   IF F = @3100001 THEN                                                              04426800 T  0361:3
      IF S NEQ @77777 THEN GO TO SEVEN;                                              04427000 T  0362:2
   S:=FIN;                                                                           04427200 T  0364:1
   IF FALSE THEN                                                                     04427400 T  0365:0
LEAVE:                                                                               04427600 T  0365:1
   IOD  := IOQUE[S];                                                                 04427800 T  0365:3
   FIN  := FINALQUE[S] AND NOT MEMORY;                                               04428000 T  0366:3
   IF IOD.[24:1] THEN                                                                04428200 T  0368:2
      BEGIN                                                                          04428400 T  0369:1
      NT4 := M[IOD INX ( IF IOD.[22:1] THEN 1 ELSE NOT 0)];                          04428600 T  0369:3
      FINISHOFFIO(U);                                                                04428800 T  0374:0
      END;                                                                           04429000 T  0374:3
                                                                                                  04428400
   IF ( T1:= FIN) LSS 0 THEN                                                         04429200 T  0374:3
```

```
    P(R&F[25:40:8]&IOD[3:3:5] OR IOMASK,LOCATQUE[S],*)
    ELSE
       BEGIN
       IF F NEQ 0 THEN
          BEGIN
          P(.T1,PRL);
          T1 := T1&F[25:40:8];
          END

       ELSE P(.T1,IOR);
       LOCN := [M[LOCATQUE[S]]];
       IOD := IOD.[33:15];
       WHILE LOCN[0].[33:15] NEQ IOD DO LOCN := 1 INX LOCN;
       LOCN[0] := P(.T1,LOD);
       END;

    UNIT[U] := T;
CLEAR:
    UNIT[U] := (*P(DUP))&F[5:20:13];
    STARTIO(U);
KILLL:
    LOCATQUE[S].[11:1]:=0;
KILLER:
    KILL([MSCW]);
    END;
```

```
04429400 T  0376:0
04429600 T  0380:0
04429800 T  0380:0
04430000 T  0383:0
04430200 T  0383:3
04430400 T  0384:1
04430600 T  0385:0
04430800 T  0386:3
                   04430200
04431000 T  0386:3
04431200 T  0387:3
04431400 T  0389:1
04431600 T  0390:2
04431800 T  0394:0
04432000 T  0395:0
                   04429800
04432200 T  0395:0
04432400 T  0396:1
04432600 T  0396:1
04432800 T  0398:3
04433000 T  0399:2
04433200 T  0399:2
04433400 T  0402:0
04433600 T  0402:0
04433800 T  0402:3
                   04353400
          SIZE= 0403 WORDS
```

```
                $ SET OMIT = NOT DEBUGGING                                                                  04544999 T  0000:0
               REAL PROCEDURE TAPEPARITYRETRY(R,U,KEY);%                                                    04548000 T  0000:0
                                                                                          START OF REL SEGMENT; DISK ADDRESS = 00074
                  VALUE R,U,KEY;%                                                                           04549000 T  0000:0
                  REAL R,U,KEY;%                                                                            04550000 T  0000:0
                   BEGIN REAL T1,T2,T3; INTEGER I= T1;%                                                     04551000 T  0000:0
STACK(F+2) = T1
STACK(F+3) = T2
STACK(F+4) = T3
STACK(F+2) = I
                        REAL RESULT,IOD,OIOD,SPACEMASK,SPACEIOD,M,N,W,MODE;%                                04552000 T  0000:0
STACK(F+5) = RESULT
STACK(F+6) = IOD
STACK(F+7) = OIOD
STACK(F+10) = SPACEMASK
STACK(F+11) = SPACEIOD
STACK(F+12) = M
STACK(F+13) = N
STACK(F+14) = W
STACK(F+15) = MODE
                        REAL J,K;%                                                                          04553000 T  0000:0
STACK(F+16) = J
STACK(F+17) = K
                        REAL ERASEIOD=SPACEMASK;%                                                           04554000 T  0000:0
STACK(F+10) = ERASEIOD
                     REAL Z,Y,MIX,BSIZE;                                                                    04554100 T  0000:0
STACK(F+20) = Z
STACK(F+21) = Y
STACK(F+22) = MIX
STACK(F+23) = BSIZE
                        LABEL XIO,GIVEUP;                                                                   04554200 T  0000:0
                        LABEL RP,LX;                                                                        04554300 T  0000:0
                        REAL SIZE,T4,LIMIT;                                                                 04554500 T  0000:0
STACK(F+24) = SIZE
STACK(F+25) = T4
STACK(F+26) = LIMIT
                        REAL PTR,BUFFER,BUFFERSIZE,%                                                        04554600 T  0000:0
STACK(F+27) = PTR
STACK(F+30) = BUFFER
STACK(F+31) = BUFFERSIZE
                           PATTERN,PATTERN1,PATTERN2,PATTERNWORD;% DON"T CHANGE ORDER                        04554700 T  0000:0
STACK(F+32) = PATTERN
STACK(F+33) = PATTERN1
STACK(F+34) = PATTERN2
STACK(F+35) = PATTERNWORD
                        BOOLEAN TESTING,SPACING,FLAGGER;                                                    04554800 T  0000:0
STACK(F+36) = TESTING
STACK(F+37) = SPACING
STACK(F+40) = FLAGGER
                  $ SET OMIT = NOT(PACKETS)                                                                 04554899 T  0000:0
                     DEFINE UNITNO = PSEUDOMIX[MIX]#;                                                       04554900 T  0000:0
                  $ POP OMIT                                                                                04554901 T  0000:0
                     LABEL XXIT,EXIT,ENDIT,XEXIT;                                                           04555000 T  0000:0
                   SUBROUTINE RECORDRETRY;%                                                                 04555050 T  0000:0
                   BEGIN%                                                                                   04555100 T  0001:0
                     IF PTR-KEY = TAPEBUFFERSIZE-1 THEN%                                                    04555150 T  0001:0
                     BEGIN%                                                                                 04555200 T  0002:3
```

```
    T4 := TYPEDSPACE(TAPEBUFFERSIZE*MAINTBUFFAREAV);%          %167-
    MOVE(10,KEY,T4);%
    MEMORY[KEY+8]:= TAPEBUFFERSIZE-10;%
    MEMORY[KEY+9]:= 1023;%
    LINKUP(3,KEY);%
    KEY:= T4; PTR:= KEY+9;%
  END;%

  MEMORY[PTR:=PTR+1]:= IOD;%
  MEMORY[PTR:=PTR+1]:= RESULT & RDCTABLE[U][19:1:2];%
END RECORDRETRY;%

SUBROUTINE DOIONOW;%
BEGIN FOR Y←1 STEP 1 UNTIL 18 DO
     BEGIN IF R.[24:1]THEN
          BEGIN % WAIT 1/15 SEC BETWEEN READ RETRIES
               WHILE T4>CLOCK+P(RTR) DO SLEEP(1,1);
               T4←CLOCK+P(RTR)+4;
          END;

          IF IOQUESLOTS=0 THEN SLEEP([IOQUESLOTS],63);
          IOQUESLOTS:=IOQUESLOTS-1;
          IOQUEAVAIL:=IOQUE[T1:=IOQUEAVAIL];
          IOQUE[T1]← IOD;%
          LOCATQUE[T1]←LOCATQUE[T2 ←(T3←UNIT[U]),[18:15]]&[RESULT]%
               [33:33:15]&T2[18:33:15];%
          UNIT[U] ← T3&T1[18:33:15]&64[5:35:13];%
          STARTIO(U);%
          FINALQUE[T1] ← NABS(IOD)&  0 [25:40:8] OR IOMASK;%
          RESULT ← 0;%
          SLEEP([UNIT[U]],@100000000000);%
          IF RESULT.[30:1] THEN % NOT READY
             BEGIN
             MODF := (-16);
             GO TO EXIT;
             END;

          IF RESULT.[29:1] AND RESULT.[2:1] THEN
          BEGIN
               IF RESULT.[12:1] THEN    %  BLANK TAPE
               IF IOD.[24:1] THEN       %  READ
                    TRANSACTION[U]←TRANSACTION[U]-1&IOD[1:22:1] ELSE
               BEGIN;    %   WRITE
                    STREAM(A←TINU[U],T←T2←SPACE(3));
                    BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;
                         DS←21 LIT" BLANK TAPE ON WRITE←";
                    END;

                    SPOUTER(T2,UNITNO,35);
                    GO TO XXIT;%
               END;

               IF RESULT.[11:1] THEN    %  MEM PARITY
               BEGIN;
                    STREAM(A←TINU[U],T←T2←SPACE(3));
                    BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;
                         DS←13 LIT" I/O MEM PAR←";
```

```
04555250 P  0003:1
04555300 T  0005:2
04555350 T  0007:0
04555400 T  0009:2
04555450 T  0011:2
04555500 T  0012:2
04555550 T  0014:2
                    04555200
04555600 T  0014:2
04555650 T  0017:0
04555700 T  0020:3
                    04555100
04556000 T  0021:0
04556100 T  0021:0
04557000 T  0022:0
04557100 T  0022:3
04557200 T  0023:1
04557300 T  0027:0
04557400 T  0028:3
                    04557100
04558000 T  0028:3
04558500 T  0031:2
04559000 T  0032:3
04560000 T  0034:1
04561000 T  0035:2
04562000 T  0038:3
04563000 T  0040:0
04564000 T  0042:3
04565000 T  0043:2
04566000 T  0046:2
04567000 T  0047:1
04567010 T  0049:0
04567020 T  0049:3
04567030 T  0050:1
04567040 T  0051:1
04567050 T  0053:0
                    04567020
04567100 T  0053:0
04567150 T  0054:3
04567200 T  0055:1
04567250 T  0056:0
04567300 T  0057:1
04567310 T  0059:1
04567320 T  0061:1
04567400 T  0064:2
04567500 T  0065:1
04567550 T  0068:1
                    04567400
04567600 T  0068:2
04567700 T  0070:0
04567750 T  0070:2
                    04567310
04567770 T  0070:2
04567780 T  0071:1
04567790 T  0071:3
04567800 T  0075:0
04567810 T  0075:3
```

```
                                    END;                                                                    04567820 T  0077:3
                                                                                                                     04567800
                                    SPOUTFR(T2,UNITNO,35);                                                  04567830 T  0078:0
                XXIT:               MODE := 16;                                                             04567840 T  0079:2
                                    IF TESTING THEN GO XIO;                                                 04567845 T  0080:1
                                    RECORDRETRY;                                                            04567850 T  0081:1
                                    GO TO FXIT;                                                             04567855 T  0082:0
                               END;                                                                         04567860 T  0082:2
                                                                                                                     04567780
                               IF RESULT.[13:2]≠0 THEN Y←18;                                                04567870 T  0082:2
                          END ELSE GO TO XIO;                                                               04567900 T  0085:0
                                                                                                                     04567150
                     END;%                                                                                  04568000 T  0085:0
                                                                                                                     04557000
                     RESULT.[27:1]←1; MODE←32;                                                              04568100 T  0087:1
                XIO: IF NOT SPACING THEN RECORDRETRY;                                                       04568200 T  0089:3
                     END DOIONOW;%                                                                          04568250 T  0092:0
                                                                                                                     04556100
                SUBROUTINE SPACEBACK;                                                                       04568300 T  0092:1
                BEGIN                                                                                       04568310 T  0093:0
                     IF TRANSACTION[U]=1 THEN                                                               04568320 T  0093:0
                     BEGIN                                                                                  04568330 T  0094:0
                          IOD:=@4200000000&OIOD[3:3:5];                                                     04568340 T  0094:2
                          DOIONOW;                                                                          04568350 T  0096:1
                          I:=TWO(U);                                                                        04568360 T  0097:0
                          T2:=CLOCK+P(RTR)+600;                                                             04568364 T  0098:1
02258000    ACCIDENTAL ENTRY AT RTR
                          COMPLEXSLEEP((P(RRR) AND I)≠0 OR T2<CLOCK+P(RTR));                                04568366 T  0100:0
                          IF (P(RRR) AND I)=0 THEN          % TIME OUT => NOT READY                        04568370 T  0107:3
                          BEGIN MODE:=-16;                                                                  04568372 T  0109:0
                               GO TO EXIT;                                                                  04568374 T  0110:2
                          END;                                                                              04568376 T  0112:0
                                                                                                                     04568372
                     END ELSE                                                                               04568380 T  0112:0
                                                                                                                     04568330
                     BEGIN                                                                                  04568390 T  0112:0
                          M:=W;                                                                             04568400 T  0112:2
                          IOD:=SPACEIOD;                                                                    04568410 T  0113:1
                          J:=0;                                                                             04568420 T  0114:0
                          SPACING:= TRUE;%                                                                  04568425 T  0114:3
                          DO BEGIN                                                                          04568430 T  0115:2
                               DOIONOW;                                                                     04568440 T  0115:2
                               TRANSACTION[U]:=(*P(DUP))+1;                                                 04568450 T  0117:0
                               J:=J+1;                                                                      04568460 T  0119:0
                          END UNTIL ((M:=RESULT.[CF]-SPACEIOD.[CF]+M) LSS 0                                 04568470 T  0120:1
                                                                                                                     04568430
                               OR RESULT.[27:1]) AND J GTR 1;                                               04568480 T  0123:0
                          IF NOT TESTING THEN SPACING:= FALSE;                                              04568485 T  0126:0
                          TRANSACTION[U]:=(*P(DUP))-2;                                                      04568490 T  0127:3
                          IOD:=SPACEIOD&0[22:47:1];                                                         04568500 T  0129:3
                          DOIONOW;                                                                          04568510 T  0131:2
                          IF N=0 THEN BSIZE:=RESULT.[CF]-IOD.[CF] ELSE                                      04568520 T  0133:0
                          IF BSIZE≠RESULT.[CF]-IOD.[CF] THEN                                                04568530 T  0136:2
                          BEGIN                                                                             04568540 T  0139:1
                               STREAM(A:=TINU[U],D:=T2:=SPACE(10));                                         04568550 T  0139:3
                               BEGIN SI:=LOC A;SI:=SI+5;DS:=3 CHR;                                          04568560 T  0143:0
                                    DS:=13 LIT" ERASE ERROR←";                                              04568570 T  0143:3
```

```
                    END;                                                                    04568580 T  0145:3
                                                                                                     04568560
                    SPOUTER(T2,UNITNO,35);                                                  04568590 T  0146:0
                    FLAGGER ← 1;                                                            04568595 T  0147:2
                    GO GIVEUP;                                                              04568600 T  0148:1
               END;                                                                         04568610 T  0148:3
                                                                                                     04568540
          END;                                                                              04568620 T  0148:3
                                                                                                     04568390
END; % OF SPACEBACK                                                                         04568630 T  0148:3
                                                                                                     04568310
TINU[U].[18:12] ← P(DUP).[18:12]+1;%                                                        04569000 T  0149:0
MIX ← LOCATQUE[UNIT[U].[FF]].[3:5];                                                         04569100 T  0160:2
FLAGGER ← FINALQUE[UNIT[U].[FF]] < 0; % NOT OBJECT JOB                                      04569200 T  0162:3
OIOD ← NFLAG(IOQUE[UNIT[U].[18:15]]);%                                                      04570000 T  0165:0
PTR:= KEY+9;                                                                                04570100 T  0167:0
IF R.[24:1] THEN%                                                                           04571000 T  0168:1
BEGIN COMMENT READ RETRY;%                                                                  04572000 T  0169:0
     SPACEMASK ← OIOD.[21:2]×@1111 EQV NOT @0123;%                                          04573000 T  0169:2
     SPACEIOD ← OIOD&1[8:38:10]&1[23:47:1];%                                                04574000 T  0172:0
     FOR M ← 1 STEP 1 UNTIL 3 DO%                                                           04575000 T  0174:3
          BEGIN SPACEIOD ← SPACEIOD&SPACEMASK[21:46:2];%                                    04576000 T  0176:0
               FOR N ← 1 STEP 1 UNTIL 5 DO%                                                04577000 T  0177:3
                    BEGIN IOD ← SPACEIOD;%                                                 04578000 T  0179:0
                         IF N≠1 OR M≠1 THEN DOIONOW ELSE                                   04579000 T  0179:3
                         IF NOT(R.[29:1]AND R.[2:1] AND R.[12:1])                          04579100 T  0183:0
                            THEN DOIONOW;                                                  04579200 T  0185:1
                         IF RESULT.[28:1] THEN%                                            04580000 T  0188:0
                           BEGIN MODE ← 0;%                                                04581000 T  0188:3
                                 IOD ← OIOD;%                                              04582000 T  0190:0
                           END%                                                            04583000 T  0190:3
                                                                                                     04581000
                         ELSE BEGIN MODE ← 8;%                                             04584000 T  0190:3
                                 IOD ← OIOD&SPACEMASK[21:43:2];%                           04585000 T  0192:0
                         END;%                                                             04586000 T  0193:3
                                                                                                     04584000
                         DOIONOW;%                                                         04587000 T  0193:3
                         IF NOT RESULT.[28:1] THEN GO TO EXIT;%                            04588000 T  0195:0
                         IF MOD3IOS THEN IF OIOD.[23:1] THEN                               04588010 T  0196:1
                         BEGIN Z←IOD←OIOD&SPACEMASK[21:40:2]                               04588020 T  0198:1
                              &(OIOD.[33:15]+(OIOD.[8:10]-1)                               04588030 T  0199:1
&OIOD[1:22:1])[33:33:15];                                                                  04588040 T  0201:3
                              DOIONOW; MODE←0;                                             04588050 T  0204:2
                              IF RESULT.[28:1] THEN                                        04588060 T  0206:3
                              BEGIN IOD←OIOD; DOIONOW;                                     04588070 T  0207:2
                                    IF NOT RESULT.[28:1] THEN                              04588080 T  0210:0
                                       GO TO EXIT;                                         04588090 T  0211:0
                                    IOD←Z&SPACEMASK[21:46:2];                              04588100 T  0211:1
                                    DOIONOW; MODE←8;                                       04588110 T  0213:0
                                    IF RESULT.[28:1] THEN                                  04588120 T  0214:3
                                    BEGIN IOD←OIOD&SPACEMASK                               04588130 T  0215:2
                                             [21:43:2];                                    04588140 T  0216:1
RP:                                       DOIONOW;                                         04588150 T  0217:3
                                          IF RESULT.[28:1] THEN                            04588160 T  0219:0
                                             GO TO LX;                                     04588170 T  0219:3
                                          GO TO EXIT;                                      04588180 T  0220:2
                                    END;                                                   04588190 T  0221:0
```

```
                                                                    04588130
            END;                                        04588200 T  0221:0
                                                                    04588070
            Z←ABS(IOD.[33:15]-RESULT.[33:15]);          04588210 T  0221:0
            IF IOD.[21:2]=0 THEN                        04588220 T  0223:2
               Z←Z-(RESULT.[15:3]=0);                   04588230 T  0224:3
            IF IOD.[8:10]<Z THEN                        04588240 T  0227:2
            BEGIN IOD←OIOD; MODE←0; GO TO RP END;       04588250 T  0228:3
                                                                    04588250
            IF IOD.[22:1] THEN                          04588260 T  0231:1
            STREAM(Z,Y←Z DIV 64,                        04588270 T  0232:0
                    S←RESULT.[33:15]+1,                 04588280 T  0233:3
                    SK←(RESULT.[15:3]+1).[45:3],        04588290 T  0235:0
                    GM←(IF IOD.[21:1] THEN 0            04588300 T  0236:3
                                     ELSE "←"),         04588310 T  0237:2
                    D←OIOD.[33:15]);                    04588320 T  0239:0
            BEGIN SI←S; SI←SI+SK;                       04588330 T  0240:0
                   Y(16(DS←32 CHR));                    04588340 T  0240:3
                   Z(DS←8 CHR);                         04588350 T  0242:1
                   SK(DS←LIT "0");                      04588360 T  0243:1
                   DI←DI-SK; SI←LOC GM;                 04588370 T  0244:2
                   SI←SI+7; DS←CHR;                     04588380 T  0245:1
            END ELSE                                    04588390 T  0245:3
                                                                    04588330
            STREAM(Z,Y←Z DIV 64,                        04588400 T  0246:0
                    S←RESULT.[33:15]-1,                 04588410 T  0247:3
                    SK←(RESULT.[15:3]+7).[45:3],        04588420 T  0249:0
                    FL←(IF IOD.[21:1] THEN 0            04588430 T  0250:3
                                     ELSE @14),         04588440 T  0251:2
                    FK←(8-RESULT.[15:3]).[45:3],        04588450 T  0253:0
                    D←OIOD.[33:15]);                    04588460 T  0254:3
            BEGIN SI←S; SI←SI+SK; DI←DI+7;              04588470 T  0255:3
                   Y(16(32(DS←CHR; SI←SI-2;             04588480 T  0256:3
                          DI←DI-2)));                   04588490 T  0258:1
                   Z(8(DS←CHR; SI←SI-2; DI←DI-2));      04588500 T  0259:1
                   SI←LOC FL; SI←SI+7;                  04588510 T  0261:1
                   FK(DS←CHR; SI←SI-1; DI←DI-2);        04588520 T  0261:3
            END;                                        04588530 T  0263:1
                                                                    04588470
            IOD←@140000005&OIOD[22:22:1]                04588540 T  0263:2
                          &OIOD[3:3:5]];                04588550 T  0264:0
            DOIONOW; GO TO EXIT;                        04588560 T  0266:1
LX:        END;                                         04588570 T  0269:0
                                                                    04588020
     END;%                                              04589000 T  0269:0
                                                                    04578000
N ← IF TRANSACTION[U] < 15 THEN%                        04590000 T  0271:1
          TRANSACTION[U] ELSE 15;%                      04591000 T  0272:1
IOD ← SPACEIOD&SPACEMASK[21:40:2];%                     04592000 T  0274:2
SPACING:= TRUE;                                         04592100 T  0276:1
FOR W ← 1 STEP 1 UNTIL N DO%                            04593000 T  0277:0
     BEGIN DOIONOW;%                                    04594000 T  0278:0
          IF RESULT.[27:1] THEN N←0;%                   04595000 T  0279:0
     END;%                                              04596000 T  0281:0
                                                                    04594000
IOD ← SPACEIOD&SPACEMASK[21:37:2];%                     04597000 T  0283:1
FOR N ← 3 STEP 1 UNTIL W DO DOIONOW;%                   04598000 T  0285:0
```

```
                    IOD ← OIOD;%                                                    04599000 T  0289:1
                    MODE ← 0;%                                                      04600000 T  0290:0
                    SPACING:= FALSE;                                                04600100 T  0290:3
                    DOIONOW;%                                                       04601000 T  0291:2
                    IF NOT RESULT.[28:1] THEN GO TO EXIT;%                          04602000 T  0293:0
               END;%                                                                04603000 T  0294:1
                                                                                                    04576000
     MODE ← 16;%                                                                    04604000 T  0296:2
END ELSE BEGIN COMMENT WRITE RETRY;%                                                04605000 T  0297:1
                                                                                                    04572000
     LIMIT ← @15000;                                                                04605500 T  0297:3
     ERASEIOD ← (SPACEIOD ← OIOD&0[8:38:10]&7[22:45:3]&[T2]%                        04606000 T  0298:2
               [33:33:15])&@112[18:41:7];%                                          04607000 T  0301:0
     W ← R.[33:15]-OIOD.[33:15]+2;%                                                 04608000 T  0303:1
     WHILE TRUE DO                                                                  04609000 T  0306:0
          BEGIN                                                                     04610000 T  0306:3
               SPACEBACK;                                                           04611000 T  0306:3
               IF MIX≠0 THEN IF TERMSET(MIX) THEN GO XEXIT;                         04626000 T  0308:0
               IF (N←N+W+128) GTR LIMIT THEN GO GIVEUP;                             04627000 T  0311:1
               IOD ← ERASEIOD&N[9:39:9];%                                           04628000 T  0314:0
               SPACING:= TRUE;%                                                     04628100 T  0315:3
               FOR J ← 0 STEP 512 UNTIL N DO%                                       04629000 T  0316:2
                    BEGIN TRANSACTION[U] ← TRANSACTION[U]-1;%                       04630000 T  0319:0
                         DOIONOW;%                                                  04631000 T  0321:0
                         IOD ← ERASEIOD&1[8:47:1];%                                 04632000 T  0322:0
               IF RESULT.[27:1] THEN                                                04633000 T  0323:3
               BEGIN                                                                04633100 T  0324:2
                    IF NOT R.[27:1] THEN LIMIT←J+3000;                              04633200 T  0325:0
                    R.[27:1]←1;                                                     04633300 T  0327:3
               END;                                                                 04633400 T  0329:2
                                                                                                    04633100
                    END;%                                                           04634000 T  0329:2
                                                                                                    04630000
               SPACING:= FALSE;%                                                    04634100 T  0331:3
               IOD:= IOD & N[CTC];%                                                 04634200 T  0332:2
               RECORDRETRY;%                                                        04634300 T  0333:3
               IOD ← OIOD;%                                                         04635000 T  0335:0
               DOIONOW;%                                                            04636000 T  0335:3
               IF RESULT.[27:1] THEN R.[27:1] ← 1;%                                 04637000 T  0337:0
               IF NOT RESULT.[28:1] THEN%                                           04638000 T  0340:0
               BEGIN                                                                04638100 T  0341:0
                    SIZE←RESULT.[CF]-OIOD.[CF];                                     04638200 T  0341:2
                    SPACEBACK;                                                      04638300 T  0343:3
                    IOD←SPACEIOD&0[22:47:1];                                        04638650 T  0345:0
                    DOIONOW;                                                        04638700 T  0346:3
                    IF NOT(RESULT.[28:1] OR (OIOD.[21:1] AND                        04638800 T  0348:0
                         (RESULT.[CF]-SPACEIOD.[CF]≠SIZE))) THEN                    04638900 T  0349:2
                    BEGIN                                                           04639000 T  0352:2
                         MODE←0&R[42:27:1];                                         04639100 T  0353:0
                         GO TO EXIT;                                                04639200 T  0354:3
                    END;                                                            04640000 T  0357:0
                                                                                                    04639000
               END;                                                                 04641000 T  0357:0
                                                                                                    04638100
          END;%                                                                     04642000 T  0357:0
                                                                                                    04610000
GIVEUP:                                                                             04642900 T  0357:2
```

```
                STREAM(A←TINU[U], T←T2←SPACE(6));                                    04644000 T  0357:2
                     BEGIN SI ← LOC A; SI ← SI+5; DS ← 3 CHR;%                       04645000 T  0360:3
                          DS ← 11 LIT " WR PARITY←";%                                04646000 T  0361:2
                     END;%                                                           04647000 T  0363:1
                                                                                                   04645000
                IF MIX≠0 THEN IF (NOT OIOD).[21:1] THEN % ALPHA TAPE                 04647050 T  0363:2
                BEGIN STREAM(T←0; S←OIOD.[CF], QM←@14);                              04647100 T  0365:3
                     BEGIN SI ← S; DI ← LOC QM; DI ← DI+7;                           04647150 T  0368:1
ST:                       IF SC="←" THEN GO F;                                       04647200 T  0369:0
                          IF SC=DC THEN GO L;                                        04647250 T  0369:3
                          DI ← DI-1;                                                 04647300 T  0370:2
                          GO ST;                                                     04647350 T  0370:3
L:                        TALLY←1; T←TALLY;                                          04647400 T  0371:0
F:                   END;                                                            04647450 T  0371:2
                                                                                                   04647150
                     IF P THEN                                                       04647500 T  0371:3
                     BEGIN STREAM(T2);                                               04647550 T  0371:3
                          BEGIN DI ← DI+13;                                          04647600 T  0373:0
                               DS ← 29LIT", TRIED TO WRITE INVALID CHR←";            04647650 T  0373:1
                          END;                                                       04647700 T  0377:1
                                                                                                   04647600
                          FLAGGER ← 1;                                               04647750 T  0377:2
                END; END;                                                            04647800 T  0378:1
                                                                                                   04647550
                                                                                                   04647100
                SPOUTER(T2,UNITNO,35);                                               04648000 T  0378:1
                IF MIX≠0 AND NOT FLAGGER THEN                                        04648050 T  0379:3
                BEGIN                                                                04648100 T  0381:1
                     TAPEPARITYRETRY ← Y ← WRITEPARITYREELSWITCH(OIOD,0);             04648150 T  0381:3
                     MODE ← Y.[5:8];                                                 04648200 T  0383:3
                     R.[27:1] ← 0;                                                   04648250 T  0385:0
                     GO ENDIT;                                                       04648300 T  0386:3
                END;                                                                 04648350 T  0387:1
                                                                                                   04648100
XEXIT:                                                                               04648400 T  0387:1
                MODE ← 16;%                                                          04649000 T  0387:1
           END;%                                                                     04650000 T  0388:0
                                                                                                   04605000
EXIT: TAPEPARITYRETRY:= UNIT[U] & MODE[5:40:8];                                      04651000 T  0388:0
ENDIT:                                                                               04651010 T  0390:0
           MEMORY[KEY+8] := PTR=KEY=9;                                               04651050 T  0390:0
            MEMORY[KEY+9]:=ABS(MODE);                                                04651100 T  0393:0
           MEMORY[KEY] := P(DUP,LOD) & ((PTR=KEY) DIV 5)[39:39:9];                   04651200 T  0395:1
           IF (MODE≠16) OR (R.[24:1]) THEN LINKUP(3,KEY) ELSE                        04651300 T  0399:0
           BEGIN                                                                     04651400 T  0402:1
             BUFFER:= OIOD INX 0;                                                    04651500 T  0402:3
             BUFFERSIZE:= OIOD.[8:10];                                               04651600 T  0404:0
             IF NOT OIOD.[21:1] THEN  % ALPHA WRITE - CHECK Q-MARKS                  04651700 T  0405:1
             BEGIN                                                                   04651800 T  0406:1
               STREAM(T:=0;                                                          04651900 T  0406:3
                      TEMP:=0, SVS:=0,                                               04652000 T  0407:1
                      BUFFSTART:=BUFFER,                                             04652100 T  0408:0
                      BUFFEND:=BUFFER+BUFFERSIZE);                                   04652200 T  0408:1
               BEGIN                                                                 04652300 T  0409:1
                 SI:=BUFFEND; DI:=LOC TEMP; DS:= CHR;                                04652400 T  0409:1
                 DI:=BUFFEND; DS:=LIT"-"; DI:=DI-1; DS:=RESET; %Q-MARK               04652500 T  0410:0
                 SI:=BUFFSTART;                                                      04652600 T  0411:1
```

```
      IF SC > 9 THEN                                                    04652700 T  0411:2
      BEGIN                                                             04652800 T  0412:0
    L1: S1:=S1+1; IF SC>9 THEN GO L1;                                   04652900 T  0412:0
      END;                                                              04653000 T  0413:0
                                                                                       04652800
    L2: S1:=S1+1; IF SC≤9 THEN GO L2;                                   04653100 T  0413:0
      SVS1:=S1;                                                         04653200 T  0414:0
      S1:=LOC SVS1; S1:=S1+5;                                           04653300 T  0414:1
      D1:=LOC BUFFEND; D1:=D1+5;                                        04653400 T  0414:3
      IF 3 SC≠DC THEN TALLY:=1;                                         04653500 T  0415:1
      D1:=BUFFEND; S1:=LOC TEMP; DS:= CHR;                              04653600 T  0416:0
      T:=TALLY;                                                         04653700 T  0416:3
    END;                                                                04653800 T  0417:0
                                                                                       04652300
    1:=POLISH;                                                          04653900 T  0417:1
    MEMORY[KEY+2]:= P(DUP,LOD) & I[1:47:1];                             04654000 T  0417:3
  END;                                                                  04654100 T  0421:0
                                                                                       04651800
IF STOPTEST OR FLAGGER THEN LINKUP(3,KEY) ELSE                          04654200 T  0421:0
BEGIN                                                                   04654300 T  0423:3
  MEMORY[KEY] := NABS(P(DUP,LOD));                                      04654400 T  0424:1
  LINKUP(3,KEY);                                                        04654500 T  0426:1
  TESTING:= SPACING:= TRUE; N:=0;                                       04654600 T  0427:1
  BUFFERSIZE:= BUFFERSIZE-1;                                            04654700 T  0429:1
  OIOD:= OIOD & 1[18:42:6];                                             04654800 T  0430:2
  PTR:= KEY+8;                                                          04654900 T  0432:1
  STREAM(MOD2IOS:=NOT(MOD3IOS+62), D:=[PATTERN]);                       04655000 T  0433:2
  BEGIN                                                                 04655100 T  0435:3
    DS:=13 LIT"01248+x÷<(.G≤";                                          04655200 T  0435:3
    MOD2IOS(DI:=DI-6; DS:=LIT"'"; DI:=DI+5);                            04655300 T  0437:3
    DS:= LIT"'"; DS:= LIT"'";                                           04655400 T  0439:2
    DS:=3 LIT"]$(";                                                     04655500 T  0440:2
  END;                                                                  04655600 T  0441:1
                                                                                       04655100
  SLEEP([MEMORY[KEY]],@1000000000000000);                               04655700 T  0441:2
  MEMORY[PTR]:= 0; MOVE(191,PTR,PTR+1);                                 04655800 T  0443:2
  FOR K:=0 STEP 1 UNTIL 15 DO                                           04655900 T  0447:0
  BEGIN                                                                 04656000 T  0449:0
    STREAM(A:=[PATTERN],                                                04656100 T  0449:0
           K:=K+(K=15), M:=4+4×(K<14), N:=1+(K>13),                     04656200 T  0449:2
           SIZEDIV64:=BUFFERSIZE.[36:6], BUFFERSIZE,                    04656300 T  0453:3
           BUFFER);                                                     04656400 T  0454:3
    BEGIN                                                               04656500 T  0455:1
      S1:=A; S1:=S1+K;                                                  04656600 T  0455:1
      M(DS:=N CHR; S1:=S1-N);                                           04656700 T  0456:0
      S1:=BUFFER;                                                       04656800 T  0457:3
      SIZEDIV64(DS:=32 WDS; DS:=32 WDS); DS:=BUFFERSIZE WDS;            04656900 T  0458:0
      D1:=A; D1:=D1+24; DS:=WDS;                                        04657000 T  0459:3
    END;                                                                04657100 T  0460:2
                                                                                       04656500
    TOD:= OIOD:= OIOD & ((K<7) OR (K>13))[21:47:1];                     04657200 T  0460:3
    DOINOW;                                                             04657300 T  0464:2
    MEMORY[PTR]:= RESULT & RDCTABLE[U][19:1:2];                         04657400 T  0466:0
    SPACEBACK;                                                          04657500 T  0468:3
    STREAM(SIZEDIV64:=BUFFERSIZE.[36:6],BUFFERSIZE,                     04657600 T  0470:0
           BUFFER);                                                     04657700 T  0471:1
    BEGIN                                                               04657800 T  0471:3
```

```
    DS:=8 LIT" "; SI:=BUFFER;
    SIZEDIV64(DS:=32 WDS; DS:=32 WDS); DS:=BUFFERSIZE WDS;
  END;

  JOD:= OJOD & 1[24:47:1];
  DOJONOW;
  MEMORY[PTR+1]:= RESULT & RDCTABLE[U][19:1:2];
  STREAM(A:=[PATTERN] INX 3,
         CHRERR:=0, WRDERR:=0, WRDCNT:=0,
         LOOP:=0, FORSEVEN:=1, LEAPFROG:=0,
         WDSLEFT:=I:=(J:=IF (SIZE:=ABS(BUFFER-(RESULT INX 0)))
           LEQ BUFFERSIZE THEN SIZE ELSE BUFFERSIZE+1) MOD 63,
         V:=IF J<64 THEN J ELSE 63,
         N:=IF J<64 THEN 1 ELSE J DIV 63,
         RECYCLE:= IF J<64 THEN 0 ELSE IF I=0 THEN 0 ELSE 1,
         TEMP:=0, SVDI:=0,
         BITLOCN:=PTR+3, WRDLOCN:=PTR+5,
         BUFFER);
  BEGIN;
    LEAPFROG:= CI; TALLY:=0;  % USED ONLY FOR LEAPFROG RETURN
    NOV(SI:=A; IF 8 SC≠DC THEN
        BEGIN
          SI:=WRDERR; SI:=SI+8; WRDERR:=SI;
  FORSEVEN(SVDI:=DI; DI:=BITLOCN; LOOP(DI:=DI+2));
          SI:=LOC WRDCNT; SI:=SI+6; DS:=2 CHR;
          DI:=WRDLOCN; LOOP(DI:=DI+8);
          SI:=SVDI; SI:=SI-8; DS:= WDS;
          TALLY:=LOOP; TALLY:=TALLY+1; LOOP:=TALLY;
          SI:=LOC LOOP; SI:=SI+7;
          IF SC="7" THEN
          BEGIN TALLY:=0; FORSEVEN:=TALLY; END;

          DI:=SVDI);
          SI:=A; DI:=DI-8; TALLY:=0;
          8(IF SC≠DC THEN TALLY:=TALLY+1);
          TEMP:=TALLY;
          SI:=CHRERR; TEMP(SI:=SI+8); CHRERR:=SI;
        END;

        SI:=WRDCNT; SI:=SI+8; WRDCNT:=SI;
        ));
      RECYCLE(TALLY:=1; N:=TALLY;
          TALLY:=WDSLEFT; V:=TALLY;
          TALLY:=0; RECYCLE:=TALLY;
          JUMP OUT TO TADPOLE);
        GO TO FROG;
TADPOLE:  CI:=LEAPFROG;
FROG:     DI:=BITLOCN; DI:=DI-5;
          SI:=LOC CHRERR; SI:=SI+5; DS:=3 CHR;
          SI:=LOC WRDERR; SI:=SI+6; DS:=2 CHR;
      END;

      IF MEMORY[PTR].[27:1] THEN SPACEBACK;
      PTR:=PTR+12;
    END;

    MEMORY[KEY]:= P(DUP,LOD) & 0[1:1:2] & 39[39:39:9];
```

```
04657900 T  0471:3
04658000 T  0473:1
04658100 T  0475:0
                    04657800
04658200 T  0475:1
04658300 T  0477:0
04658400 T  0478:0
04658500 T  0481:1
04658600 T  0482:1
04658700 T  0483:0
04658800 T  0483:3
04658900 T  0485:0
04659000 T  0489:3
04659100 T  0492:0
04659200 T  0494:3
04659300 T  0499:0
04659400 T  0499:2
04659500 T  0501:0
04659600 T  0501:2
04659700 T  0501:2
04659800 T  0502:0
04659900 T  0503:3
04660000 T  0503:3
04660100 T  0504:2
04660200 T  0506:2
04660300 T  0507:1
04660400 T  0508:2
04660500 T  0509:1
04660600 T  0510:2
04660700 T  0511:0
04660800 T  0511:2
                    04660800
04660900 T  0512:0
04661000 T  0512:2
04661100 T  0513:1
04661200 T  0514:2
04661300 T  0514:3
04661400 T  0516:1
                    04659900
04661500 T  0516:1
04661600 T  0517:0
04661700 T  0517:2
04661800 T  0518:2
04661900 T  0519:2
04662000 T  0520:0
04662100 T  0520:3
04662200 T  0521:0
04662300 T  0521:1
04662400 T  0521:3
04662500 T  0522:2
04662600 T  0523:1
                    04659600
04662700 T  0523:2
04662800 T  0527:0
04662900 T  0528:1
                    04656000
04663000 T  0530:2
```

```
          MEMORY[KEY+2]:= P(DUP,LOD) & OPTION[2:2:1];                    04663100 T  0534:1
          LINKUP(20,KEY);                                                04663200 T  0537:2
        END;END;                                                         04663300 T  0538:2
                                                                                        04654300
                                                                                        04651400
END TAPEPARITYRETRY;%                                                   04666000 T  0538:2
                                                                                        04551000
                                                                               SIZE= 0539 WORDS
```

```
REAL PROCEDURE WRITEPARITYREELSWITCH(OIOD,RC);                                  04667000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00092
VALUE OIOD,RC; REAL OIOD,RC;                                                   04667050 T  0000:0
%                                                                              04667100 T  0000:0
%    THE PURPOSE OF THIS ROUTINE IS TO ALLOW OBJECT PROGRAMS                   04667150 T  0000:0
%    TO CHANGE MAG TAPE UNITS WHEN ENCOUNTERING A WRITE PARITY                 04667200 T  0000:0
%    ERROR. THIS ROUTINE IS CALLED FROM EITHER TAPEPARITYRETRY                 04667250 T  0000:0
%    IN RESPONSE TO A FATAL WRITE PARITY ERROR OR FROM                         04667300 T  0000:0
%    REELCHANGER AFTER AN "RC" KEYBOARD REQUEST BY THE OPERATOR.               04667350 T  0000:0
%                                                                              04667400 T  0000:0
%    BASICALLY, THIS ROUTINE READS INTO CORE THE LAST TWO                      04667450 T  0000:0
%    SUCESSFULLY WRITTEN BLOCKS ON THE TAPE, CLOSES THE FILE                   04667500 T  0000:0
%    (MARKING THE TAPE AS AN END OF REEL), OBTAINS ANOTHER                     04667550 T  0000:0
%    TAPE UNIT, RE-WRITES THE TWO BLOCKS IN CORE FOLLOWED                      04667600 T  0000:0
%    BY THE BLOCK IN WHICH THE PARITY ERROR OCURRED, AND                       04667650 T  0000:0
%    ALLOWS THE PROGRAM TO CONTINUE WRITING ON THE NEW TAPE.                   04667700 T  0000:0
%                                                                              04667750 T  0000:0
%    WHEN THIS ROUTINE IS CALLED DUE TO AN OPERATOR "RC"                       04667800 T  0000:0
%    MESSAGE, THERE IS NO FATAL PARITY ERROR AT THIS POINT,                    04667850 T  0000:0
%    SO THE SAVING OF THE LAST TWO RECORDS IS UNNECESSARY                      04667900 T  0000:0
%    AND ONLY THE CLOSING OF THE FILE AND OBTAINING OF A NEW                   04667950 T  0000:0
%    UNIT ARE REQUIRED.                                                        04668000 T  0000:0
%                                                                              04668050 T  0000:0
%    THE PARAMATERS ARE USED AS FOLLOWS:                                       04668100 T  0000:0
%       OIOD        THE ORIGINAL I/O DESCRIPTOR ON WHICH                       04668150 T  0000:0
%                       A FATAL ERROR OCCURRED                                 04668200 T  0000:0
%                                                                              04668250 T  0000:0
%       RC          1 IF CALLED FROM REELCHANGER, 0 OTHERWISE                  04668300 T  0000:0
%                                                                              04668350 T  0000:0
BEGIN                                                                          04668400 T  0000:0
      INTEGER I,LOGICLRC;                                                      04668450 T  0000:0
STACK(F+2) = I
STACK(F+3) = LOGICLRC
      REAL BSIZE,FNUM,NUMBUFFS,NUMRECS,REEL;                                   04668500 T  0000:0
STACK(F+4) = BSIZE
STACK(F+5) = FNUM
STACK(F+6) = NUMBUFFS
STACK(F+7) = NUMRECS
STACK(F+10) = REEL
      REAL S,Y,U,OLDU,SAVEU,MIX;                                               04668550 T  0000:0
STACK(F+11) = S
STACK(F+12) = Y
STACK(F+13) = U
STACK(F+14) = OLDU
STACK(F+15) = SAVEU
STACK(F+16) = MIX
      REAL TEMP,T1,T2,T3,T4;                                                   04668600 T  0000:0
STACK(F+17) = TEMP
STACK(F+20) = T1
STACK(F+21) = T2
STACK(F+22) = T3
STACK(F+23) = T4
      REAL IOD,RESULT,MODE,TOPIOD,TM,HOLDCT;                                   04668650 T  0000:0
STACK(F+24) = IOD
STACK(F+25) = RESULT
STACK(F+26) = MODE
STACK(F+27) = TOPIOD
```

```
STACK(F+30) = TM
STACK(F+31) = HOLDCT
                    REAL FIRSTREC,SECREC,FIRSTRECIO,SECRECIO;                    04668700 T  0000:0
STACK(F+32) = FIRSTREC
STACK(F+33) = SECREC
STACK(F+34) = FIRSTRECIO
STACK(F+35) = SECRECIO
                    BOOLEAN TOGGLES;                                             04668750 T  0000:0
STACK(F+36) = TOGGLES
                    ARRAY FIB[*],FPB[*],LABELA[*],TANK[*];                       04668800 T  0000:0
STACK(F+37) = FIB
STACK(F+40) = FPB
STACK(F+41) = LABELA
STACK(F+42) = TANK
                    %                                                            04668850 T  0000:0
                    %    THE LOCAL VARIABLES ARE USED AS FOLLOWS:                04668900 T  0000:0
                    %    INTEGERS                                                04668950 T  0000:0
                    %       I            TEMPORARY                               04669000 T  0000:0
                    %       LOGICLRC     CONTAINS THE LOGICAL RECORD COUNT       04669050 T  0000:0
                    %    REALS                                                   04669100 T  0000:0
                    %       BSIZE        BLOCK SIZE OF FILE                      04669150 T  0000:0
                    %       FNUM         FILE NUMBER WITHIN FPB                  04669200 T  0000:0
                    %       NUMBUFFS     TOTAL NUMBER OF BUFFERS DECLARED FOR FILE 04669250 T  0000:0
                    %       NUMRECS      RECORDS PER BLOCK (BSIZE DIV RECORD SIZE) 04669275 T  0000:0
                    %       REEL         CONTAINS THE CURRENT REEL NUMBER +1     04669300 T  0000:0
                    %       S            INDEX INTO IOQUE OF UNSUCCESSFUL I/O    04669350 T  0000:0
                    %       Y            TEMPORARY                               04669400 T  0000:0
                    %       U            LOGICAL UNIT NUMBER OF TAPE UNIT BEING WRITTEN 04669450 T  0000:0
                    %       OLDU         HARDWARE UNIT NUMBER OF TAPE UNIT       04669500 T  0000:0
                    %       SAVEU        LOGICAL UNIT OF ORIGINAL TAPE UNIT WITH ERROR 04669550 T  0000:0
                    %       MIX          MIX INDEX OF JOB FOR WHICH RECOVERY IS ATTEMPTED 04669600 T  0000:0
                    %       TEMP                                                 04669650 T  0000:0
                    %       T1,T2,T3,T4 TEMPORAY                                 04669700 T  0000:0
                    %       IOD          HOLDS THE I/O DESCRIPTOR FOR EACH I/O ATTEMPTED 04669750 T  0000:0
                    %       RESULT       RECEIVES THE LAST I/O RESULT DESCRIPTOR 04669800 T  0000:0
                    %       MODE         USED TO INDICATE A SUCCESSFUL RECOVERY ATTEMPT 04669850 T  0000:0
                    %       TOPIOD       LOCATION OF TOP I/O DESCRIPTOR IN TANK  04669900 T  0000:0
                    %       TM           TEMPORARY, USED FOR WRITING TAPE MARK   04669950 T  0000:0
                    %       HOLDCT       CONTAINS THE NUMBER OF FILLED BUFFERS   04670000 T  0000:0
                    %       FIRSTREC                                             04670050 T  0000:0
                    %       SECREC       ADDRESSES OF AREAS TO HOLD LAST TWO BLOCKS 04670100 T  0000:0
                    %       FIRSTRECIO                                           04670150 T  0000:0
                    %       SECRECIO     VARIABLE LENGTH BLOCK I/O DESCRIPTORS   04670200 T  0000:0
                    %    BOOLEAN                                                 04670250 T  0000:0
                    %       TOGGLES      USED TO HOLD VARIOUS BOOLEANS (SEE DEFINES) 04670300 T  0000:0
                    %    ARRAYS                                                  04670350 T  0000:0
                    %       FIB          FIB ARRAY, USED FOR CLOSEING THE FILE   04670400 T  0000:0
                    %       FPB          FPB ARRAY, USED FOR OPENING NEW FILE    04670450 T  0000:0
                    %       LABELA       ARRAY DESCRIPTOR FOR IN-CORE LABEL RECORD 04670500 T  0000:0
                    %       TANK         TANK ARRAY, CONTAINING I/O DESCRIPTORS  04670550 T  0000:0
                    %                                                            04670600 T  0000:0
                    LABEL L1,RETRY,PROB,KAPUT,RESETUNITS,ARN,ERROROUT,XIO,EXIT;  04670650 T  0000:0
                    DEFINE ALFA = TOGGLES.[47:1]#,                               04670700 T  0000:0
                           DSED = TOGGLES.[46:1]#,                               04670750 T  0000:0
                           LABELED = TOGGLES.[45:1]#,                            04670800 T  0000:0
                           NORMALPROCESS = TOGGLES.[44:1]#,                      04670850 T  0000:0
                           PBT = TOGGLES.[43:1]#;                                04670900 T  0000:0
```

```
$ SET OMIT = NOT(PACKETS)
    DEFINE UNITNO = PSEUDOMIX[MIX]#;
$ POP OMIT
    SUBROUTINE DOIONOW;
    BEGIN
         % DOIONOW IS COPIED FROM TAPEPARITYRETRY
         FOR Y ← 1 STEP 1 UNTIL 18 DO
         BEGIN IF IOD.[24:1] THEN
              BEGIN % WAIT 1/15 SECOND BETWEEN READ RETRIES
                   WHILE T4 > CLOCK+P(RTR) DO SLEEP(1,1);
                   T4 ← CLOCK+P(RTR)+4;
              END;

              IF IOQUESLOTS=0 THEN SLEEP([IOQUESLOTS],63);
              IOQUESLOTS ← IOQUESLOTS-1;
              IOQUEAVAIL ← IOQUE[T1←IOQUEAVAIL];
              IOQUE[T1] ← IOD;
              IF (T2←(T3←UNIT[U]).[FF])=@77777 THEN T3.[CF]←T1;
              LOCATQUE[T1] ← [RESULT] & MIX[3:43:5] &
                             U[12:42:6] & T2[CTF];
              UNIT[U] ← T3 & T1[CTF] & @100[5:35:13];
              STARTIO(U);
              FINALQUE[T1] ← NABS(IOD) & 0[25:40:8] OR IOMASK;
              RESULT ← 0;
              SLEEP([UNIT[U]],@100000000000);
              IF RESULT.[30:1] THEN GO ERROROUT; % NOT READY
              IF RESULT.[29:1] AND RESULT.[2:1] THEN
              BEGIN
                   IF RESULT.[12:1] THEN    %  BLANK TAPE
                   IF IOD.[24:1] THEN       %  READ
                   TRANSACTION[U] ← (*P(DUP))-(1 & IOD[1:22:1]) ELSE
                   BEGIN                    %  WRITE
                        STREAM(A←TINU[U], T←T2←SPACE(3));
                        BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;
                             DS←21 LIT" BLANK TAPE ON WRITE←";
                        END;

                        SPOUTER(T2,UNITNO,35);
                        GO ERROROUT;
                   END;

                   IF RESULT.[11:1] THEN    %  MEM PARITY
                   BEGIN
                        STREAM(A←TINU[U], T←T2←SPACE(3));
                        BEGIN SI←LOC A; SI←SI+5; DS←3 CHR;
                             DS←13 LIT" I/O MEM PAR←";
                        END;

                        SPOUTER(T2,UNITNO,35);
                        GO ERROROUT;
                   END;

                   IF RESULT.[13:2]≠0 THEN Y ← 18;
              END ELSE

              GO XIO;
    END;
```

```
04670950 T  0000:0
04671000 T  0000:0
04671050 T  0000:0
04671100 T  0000:0
04671150 T  0001:0
04671200 T  0001:0
04671250 T  0001:0
04671300 T  0002:0
04671350 T  0002:3
04671400 T  0003:1
04671450 T  0007:0
04671500 T  0008:3
                  04671350
04671550 T  0008:3
04671600 T  0011:2
04671650 T  0012:3
04671700 T  0014:1
04671750 T  0015:2
04671800 T  0020:0
04671850 T  0021:3
04671900 T  0023:3
04671950 T  0026:2
04672000 T  0027:1
04672050 T  0030:1
04672100 T  0031:0
04672150 T  0032:3
04672200 T  0034:1
04672250 T  0036:0
04672300 T  0036:2
04672350 T  0037:1
04672400 T  0038:2
04672450 T  0042:0
04672500 T  0045:0
04672550 T  0048:1
04672600 T  0049:0
04672650 T  0052:0
                  04672550
04672700 T  0052:1
04672750 T  0053:3
04672800 T  0054:1
                  04672450
04672850 T  0054:1
04672900 T  0055:0
04672950 T  0055:2
04673000 T  0058:3
04673050 T  0059:2
04673100 T  0061:2
                  04673000
04673150 T  0061:3
04673200 T  0063:1
04673250 T  0063:3
                  04672900
04673300 T  0063:3
04673350 T  0066:1
                  04672250
04673400 T  0066:1
04673450 T  0066:1
```

```
                                                                                                                    04671300
          RESULT.[27:1] ← 1; MODE ← 32;                                                          04673500 T  0068:2
XIO: END DOIONOW;                                                                                04673550 T  0071:0
                                                                                                                    04671150
     %                                                                                           04673600 T  0071:1
     U ← SAVEU ← OIOD.[3:4];                                                                     04673650 T  0071:1
     % SAVE OFF ORIGINAL UNIT FOR DS-ING.                                                        04673700 T  0082:1
     OLDU ← UNIT[U];                                                                             04673750 T  0082:1
     % SAVE OFF ORIGINAL UNIT TABLE ENTRY                                                        04673800 T  0083:1
     MIX ← RDCTABLE[U].[8:6];                                                                    04673850 T  0083:1
     MODE ← 16;                                                                                  04673900 T  0084:3
     % SET MODE TO FLAG PARITY, MODE WILL BE SET TO ZERO IF CHANGE OK                            04673950 T  0085:2
     LABELA ← M[(TOPIOD←PRNTABLE[U].[15:15])-2] & @05000[CTE];                                   04674000 T  0085:2
     FIB ← M[TOPIOD-3];                                                                          04674050 T  0089:1
     PBT ← FIB[4].[8:4]=7;                                                                       04674100 T  0091:1
     FNUM ← FIB[4].[13:11];                                                                      04674150 T  0094:1
     BSIZE ← IF PBT THEN 90 ELSE FIB[18].[3:15];                                                 04674200 T  0095:3
     NUMRECS ← IF PBT THEN 5 ELSE BSIZE DIV FIB[18].[33:15];                                     04674225 T  0099:1
     REEL ← FIB[13].[28:10]+1;                                                                   04674250 T  0103:1
     ALFA ← (NOT FIB[13]).[24:1];                                                                04674300 T  0105:1
     LABELED ← (NOT FIB[4]).[2:1];                                                               04674350 T  0108:0
     NUMBUFFS ← FIB[13].[10:9];                                                                  04674400 T  0110:3
     TANK ← [M[TOPIOD]] & NUMBUFFS[8:38:10];                                                     04674450 T  0112:1
     HALT;                                                                                       04674500 T  0114:2
     % STOP NORMAL STATE PROCESSING.                                                             04674550 T  0115:0
     IF RC THEN                                                                                  04674600 T  0115:0
     IF TANK[0].[24:1] THEN                                                                      04674650 T  0115:1
     BEGIN                                                                                       04674700 T  0116:3
          STREAM(T←T2←SPACE(5));                                                                 04674750 T  0117:1
               DS ← 40 LIT"#REEL SWITCH NOT POSSIBLE ON INPUT FILE←";                            04674800 T  0120:0
          SPOUTER(T2,UNITNO,1);                                                                  04674850 T  0125:2
          GO EXIT;                                                                               04674900 T  0127:0
     END;                                                                                        04674950 T  0129:0
                                                                                                                    04674700
     STREAM(A←TINU[U], T←T2←SPACE(5));                                                           04675000 T  0129:0
     BEGIN                                                                                       04675050 T  0132:1
          DS ← 34 LIT"#REEL SWITCH TO BE ATTEMPTED FROM ";                                       04675100 T  0132:1
          SI ← LOC A; SI ← SI+5; DS ← 3 CHR; DS ← LIT"←";                                        04675150 T  0136:3
     END;                                                                                        04675200 T  0138:0
                                                                                                                    04675050
     SPOUTER(T2,UNITNO,1);                                                                       04675250 T  0138:1
     IF PBT THEN                                                                                 04675300 T  0139:3
     BEGIN                                                                                       04675350 T  0140:2
          LABELA.[8:10] ← 8; % PRINTER LABELS ARE 15 WORDS                                       04675400 T  0141:0
          LABELA[1] ← MULTITABLE[U].[3:45];                                                      04675450 T  0143:0
          LABELA[2] ← LABELTABLE[U].[3:45];                                                      04675500 T  0145:3
     END;                                                                                        04675550 T  0148:2
                                                                                                                    04675350
     IF RC THEN GO L1;                                                                           04675600 T  0148:2
     FIRSTREC ← GETSPACE(BSIZE+4,0,1)+4;                                                         04675650 T  0149:2
     SECREC ← GETSPACE(BSIZE+4,0,1)+4;                                                           04675700 T  0152:1
     % GETSPACE ON TWO BUFFERS FOR BACKWARD READ.                                               04675750 T  0155:0
     IF ALFA THEN                                                                                04675800 T  0155:0
     BEGIN                                                                                       04675850 T  0155:3
          IOD ← @340000000 & OIOD[3:3:5] & [T2][CTC];                                            04675900 T  0156:1
          DOIONOW; DOIONOW;                                                                      04675950 T  0158:2
          IOD ← OIOD & 1[24:47:1] & FIRSTREC[CTC];                                               04676000 T  0161:0
```

```
          DO;ONOW;                                                                                  04676050 T  0163:1
          IF RESULT.[27:2]≠0 THEN GO ERROROUT;                                                      04676100 T  0164:0
          IOD ← IOD & SECREC[CTC];                                                                  04676150 T  0165:3
          DO;ONOW;                                                                                  04676200 T  0167:0
          IF RESULT.[27:2]≠0 THEN GO ERROROUT;                                                      04676250 T  0168:0
          IOD ← @340000000 & O;OD[3:3:5] & [T2][CTC];                                               04676300 T  0169:3
          DO;ONOW; DO;ONOW;                                                                         04676350 T  0172:0
          GO L1;                                                                                    04676400 T  0174:0
     END;                                                                                           04676450 T  0176:0
                                                                                                                  04675850
     IOD ← O;OD & (SECREC+BSIZE-1)[CTC] & 5[22:45:3];                                               04676500 T  0176:0
     DO;ONOW;                                                                                       04676550 T  0179:1
     % BUILD BACKWARD DESCRIPTOR AND EXECUTE FIRST BACKWARD READ.                                    04676600 T  0180:0
     IF RESULT.[27:2]≠0 THEN GO ERROROUT;                                                           04676650 T  0180:0
     IF (TEMP ← M[IOD INX 1])≠BSIZE THEN                                                            04676700 T  0181:3
     % VARIABLE LENGTH BLOCK.                                                                       04676750 T  0184:1
     SECRECIO ← ((IOD INX 1)-TEMP) & TEMP[8:38:10];                                                 04676800 T  0184:1
     IOD ← IOD & (FIRSTREC+BSIZE-1)[CTC];                                                           04676850 T  0187:2
     DO;ONOW;                                                                                       04676900 T  0189:3
     % NEXT BACKWARD READ.                                                                         04676950 T  0191:0
     IF RESULT.[27:2]≠0 THEN GO ERROROUT;                                                           04677000 T  0191:0
     IF (TEMP ← M[IOD INX 1])≠BSIZE THEN                                                            04677050 T  0192:3
     % VARIABLE LENGTH BLOCK.                                                                       04677100 T  0195:1
     FIRSTRECIO ← ((IOD INX 1)-TEMP) & TEMP[8:38:10];                                               04677150 T  0195:1
L1:                                                                                                 04677200 T  0198:2
     FOR I ← 0 STEP 1 UNTIL NUMBUFFS-1 DO                                                           04677250 T  0198:2
     IF (NOT TANK[I]).[19:1] THEN HOLDCT ← HOLDCT+1;                                                04677300 T  0202:3
     % SCAN FOR THE NUMBER OF FILLED BUFFERS.                                                       04677350 T  0206:1
     FIB[6] ← FIB[6]-((RC=0)×2)-HOLDCT;                                                             04677400 T  0206:1
     LOGICLRC ← FIB[7] MOD NUMRECS;                                                                 04677450 T  0209:3
     % DETERMINE THE NUMBER OF LOGICAL RECORDS WRITTEN.                                             04677500 T  0211:1
     FIB[7] ← FIB[6] × NUMRECS;                                                                     04677550 T  0211:1
     % LOAD FIB WITH RECORD COUNT FOR TRAILER LABEL.                                               04677600 T  0213:1
     IF HOLDCT=NUMBUFFS THEN                                                                        04677650 T  0213:1
     BEGIN                                                                                          04677700 T  0214:0
          NOPROCESSTOG ← NOPROCESSTOG-1;                                                            04677750 T  0214:2
          NORMALPROCESS ← 1;                                                                        04677800 T  0215:3
     END;                                                                                           04677850 T  0217:2
                                                                                                                  04677700
     % IF THERE ARE NO UNFILLED BUFFERS THEN ALLOW NORMAL STATE                                     04677900 T  0217:2
     % PROCESSING TO CONTINUE.                                                                      04677950 T  0217:2
     % FLAG THE RELEASE OF NORMAL STATE.                                                            04678000 T  0217:2
     % THE CHANCE OF UNFILLED BUFFERS IS VERY REMOTE, BUT JUST IN CASE                              04678050 T  0217:2
     P1MIX ← MIX;                                                                                   04678100 T  0217:2
     % LOAD P1MIX FOR CONSOLE MESSAGES.                                                            04678150 T  0218:1
     TEMP ← U;                                                                                      04678200 T  0218:1
     % SAVE OFF CURRENT UNIT IN CASE DS CALLED AT THIS POINT.                                       04678250 T  0219:0
RETRY:                                                                                              04678300 T  0219:0
     IF TERMSET(MIX) THEN                                                                           04678350 T  0219:0
     BEGIN                                                                                          04678400 T  0220:2
          U ← (-1);                                                                                 04678450 T  0221:0
          GO ERROROUT;                                                                              04678500 T  0222:0
     END;                                                                                           04678550 T  0222:2
                                                                                                                  04678400
     TEMP ← U;                                                                                      04678600 T  0222:2
     TM ← @ 1737000000000000;                                                                       04678650 T  0223:1
     % TAPE-MARK.                                                                                  04678700 T  0224:0
     IOD ← NFLAG([TM]) & O;OD[3:3:5];                                                               04678750 T  0224:0
```

```
          DO;ONOW;                                                                  04678800 T  0226:0
          % WRITE TAPE-MARK.                                                        04678850 T  0227:0
          FIB[13].[28:10] ← REEL;                                                   04678900 T  0227:0
          IF LABELED THEN                                                           04678950 T  0229:2
          BEGIN                                                                     04679000 T  0230:1
               STREAM(BC←FIB[6], RC←FIB[7], BKUP←PBT, D←LABELA);                    04679050 T  0230:3
               BEGIN                                                                04679100 T  0233:2
                    DI ← DI+39; DS ← LIT"1";                                        04679150 T  0233:2
                    % END OF REEL FLAG.                                            04679200 T  0234:1
                    BKUP(DI ← DI+12; JUMP OUT TO OWT);                              04679250 T  0234:1
                    SI ← LOC BC; DS ← 5 DEC; DS ← 7 DEC;                            04679300 T  0235:3
OWT:                DS ← LIT"1";                                                    04679350 T  0236:2
                    % SPECIAL FLAG FOR SORT AND USE PROCEDURES                     04679400 T  0237:0
               END;                                                                 04679450 T  0237:0
                                                                                                    04679100
               IOD ← NFLAG(LABELA) & OIOD[3:3:5];                                   04679500 T  0237:1
               IF NOT PBT THEN IF ALFA THEN                                         04679550 T  0239:2
               IOD.[21:1] ← 0;                                                      04679600 T  0241:3
               DOIONOW;                                                             04679650 T  0244:0
               % BUILD I/O DESCRIPTOR AND WRITE THE TRAILER LABEL.                 04679700 T  0245:0
               IOD ← NFLAG([TM]) & OIOD[3:3:5];                                     04679750 T  0245:0
               DOIONOW;                                                             04679800 T  0247:0
          END;                                                                      04679850 T  0248:0
                                                                                                    04679000
          IOD ← IOD & @42[18:42:6];                                                 04679900 T  0248:0
          % BUILD THE REWIND DESCRIPTOR.                                           04679950 T  0249:3
          DO;ONOW;                                                                  04680000 T  0249:3
          STOPTIMING(FNUM,1023);                                                    04680050 T  0251:0
          FPB ← PRT[MIX,3];                                                         04680100 T  0252:0
          LABELTABLE[U] ← @214; % RW/L                                              04680150 T  0253:2
          MULTITABLE[U] ← RDCTABLE[U] ← PRNTABLE[U] ← 0;                            04680200 T  0254:3
          IF LABELED THEN                                                           04680250 T  0258:0
          BEGIN                                                                     04680300 T  0258:3
               STREAM(R←REEL, BKUP←PBT, D←LABELA);                                  04680350 T  0259:1
               BEGIN                                                                04680400 T  0261:1
                    SI ← LOC R; DI ← DI+24; DS ← 3 DEC;                             04680450 T  0261:1
                    % LOAD REEL NUMBER INTO LABEL.                                 04680500 T  0262:0
                    DI ← DI+12; DS ← LIT"0";                                        04680550 T  0262:0
                    BKUP(DI ← DI+12; JUMP OUT TO OWT);                              04680600 T  0262:3
                    DS ← 12 LIT"0";                                                 04680650 T  0264:1
OWT:                DS ← LIT "0";                                                   04680700 T  0266:0
                    % CLEAN OUT OLD TRAILER LABEL INFO.                            04680750 T  0266:2
               END;                                                                 04680800 T  0266:2
                                                                                                    04680400
               IF NOT PBT THEN IF ALFA THEN                                         04680850 T  0266:3
               LABELA.[7:1] ← 1;                                                    04680900 T  0269:0
               U ← LABELASCRATCH(LABELA);                                           04680950 T  0271:2
               % FIND TAPE FOR LABELED OUTPUT.                                     04681000 T  0273:0
               IF U=(-1) THEN GO ERROROUT;                                          04681050 T  0273:0
               % OPERATOR DS-ED.                                                   04681100 T  0274:2
          END ELSE                                                                  04681150 T  0274:2
                                                                                                    04680300
          BEGIN                                                                     04681200 T  0274:2
               U ← FINDOUTPUT(FPB[FNUM],FPB[FNUM+1],REEL,0,0,2,0,TM);               04681250 T  0276:0
               % FIND UNLABELED OUTPUT TAPE.                                       04681300 T  0280:0
               IF U=(-1) THEN GO ERROROUT;                                          04681350 T  0280:0
               T2 ← 0;                                                              04681400 T  0281:2
```

```
            STREAM(PRN←PRNTABLE[U],[30:18], D←[T2]);                                  04681450 T  0282:1
            BEGIN SI ← LOC PRN; DS ← 8 DEC;                                           04681500 T  0284:0
                  DI ← DI-7; DS ← 6 FILL;                                             04681550 T  0284:2
            END;                                                                      04681600 T  0285:0
                                                                                                  04681500
$ SET OMIT = PACKETS
            FILEMESSAGE(" OUT" & TINU[U][6:30:18],T2,                                 04681650 T  0285:1
                        FPB[FNUM],FPB[FNUM+1],REEL,0,0,OPNMESS);                      04681800 T  0285:1
        END;                                                                          04681850 T  0287:1
                                                                                      04681900 T  0290:2
                                                                                                  04681200
        RDCTABLE[U] ← (*P(DUP)) & MIX[8:42:6];                                        04681950 T  0290:2
        PRNTABLE[U] ← (*P(DUP)) & TOPIOD[15:33:15];                                   04682000 T  0293:0
        FPB[FNUM+3].[36:6] ← U+1;                                                     04682050 T  0295:2
        % LOAD LOGICAL UNIT NUMBER +1 INTO FPB.                                      04682100 T  0299:0
        TEMP ← OIOD.[3:4];                                                            04682150 T  0299:0
        % LUN OF OLD UNIT.                                                           04682200 T  0300:1
        S ← UNIT[TEMP].[FF];                                                          04682250 T  0300:1
        % SAVE OFF INDEX INTO IOQUE                                                  04682300 T  0301:3
        UNITT[TEMP] ← (*P(DUP)) & @77777[14:29:19];                                   04682350 T  0301:3
        % CLEAR UNIT TABLE ON OLD UNIT.                                              04682400 T  0304:1
        UNITT[U] ← OLDU;                                                              04682450 T  0304:1
        % LOAD NEW UNIT TABLE ENTRY.                                                 04682500 T  0305:2
        OIOD ← OIOD & TINU[U][3:3:5];                                                 04682550 T  0305:2
        % LOAD OIOD WITH NEW UNIT NUMBER.                                            04682600 T  0307:2
        FOR I ← 0 STEP 1 UNTIL NUMBUFFS-1 DO                                          04682650 T  0307:2
        IF TANK[I].[7:1] THEN                                                         04682700 T  0311:3
        TANK[I] ← (*P(DUP)) & OIOD[3:3:5];                                            04682750 T  0312:3
        % LOAD NEW UNIT DESIGNATE INTO I/O DESCRIPTOR TANK.                          04682800 T  0319:0
        TINU[U] ← (*P(DUP)) & TINU[TEMP][24:24:6];                                    04682850 T  0319:0
        TINU[TEMP] ← (*P(DUP)) & 0[24:42:6];                                          04682900 T  0321:3
        IF RC THEN GO KAPUT;                                                          04682950 T  0324:1
        IF FIRSTRECIO≠0 THEN IOD ← OIOD&FIRSTRECIO[8:8:10]&FIRSTRECIO[CTC]            04683000 T  0325:1
        % TEST FOR BLOCK LESS THAN MAX LENGTH--VARIABLE LENGTH--.                    04683050 T  0328:0
        ELSE IOD ← OIOD & FIRSTREC[CTC];                                              04683100 T  0328:0
        DO;ONOW;                                                                      04683150 T  0330:2
        % WRITE FIRST RECORD                                                         04683200 T  0332:0
        IF RESULT.[28:1] THEN % CHECK FOR WRITE ERROR                                 04683250 T  0332:0
        BEGIN                                                                         04683300 T  0332:3
PROB:                                                                                 04683350 T  0333:1
            FIB[13].[28:10] ← REEL-1;                                                 04683400 T  0333:1
            % DECREMENT REEL COUNT.                                                   04683450 T  0336:1
            STREAM(A←TINU[U], T←T2←SPACE(6));                                         04683500 T  0336:1
            BEGIN                                                                     04683550 T  0339:2
                DS ← 23 LIT"#REEL SWITCH FAILED ON ";                                 04683600 T  0339:2
                SI ← LOC A; SI ← SI+5; DS ← 3 CHR;                                    04683650 T  0342:3
                DS ← 22 LIT", ANOTHER REEL PLEASE←";                                  04683700 T  0343:2
            END;                                                                      04683750 T  0346:2
                                                                                                  04683550
            SPOUTER(T2,UNITNO,1);                                                     04683800 T  0346:3
            GO RETRY;                                                                 04683850 T  0348:1
        END;                                                                          04683900 T  0348:3
                                                                                                  04683300
        IF SECRECIO≠0 THEN IOD ← OIOD&SECRECIO[8:8:10]&SECRECIO[CTC]                  04683950 T  0348:3
        % CHECK FOR LESS THAN MAX LENGTH BLOCKS--VARIABLE LENGTH--                   04684000 T  0351:2
        ELSE IOD ← OIOD & SECREC[CTC];                                                04684050 T  0351:2
        % STANDARD LENGTH                                                           04684100 T  0354:0
        DO;ONOW;                                                                      04684150 T  0354:0
```

```
     % WRITE SECOND RECORD.                                                    04684200 T  0355:0
     IF RESULT.[28:1] THEN GO PROB;                                           04684250 T  0355:0
     IOD ← OIOD;                                                              04684300 T  0356:2
     % ORIGINAL BAD IO ON NEW UNIT                                            04684350 T  0357:1
     DO;ONOW;                                                                 04684400 T  0357:1
     IF RESULT.[28:1] THEN GO PROB;                                           04684450 T  0358:0
KAPUT;                                                                        04684500 T  0359:2
     IF NOT DSED THEN                                                         04684550 T  0359:2
     BEGIN                                                                    04684600 T  0360:2
          MODE ← 0;                                                           04684650 T  0361:0
          STARTIMING(FNUM,U);                                                 04684700 T  0361:3
     END;                                                                     04684750 T  0362:3
                                                                                         04684600
     % CHANGE OVER SUCCESSFUL.                                                04684800 T  0362:3
     FIB[15].[24:6] ← U;                                                      04684850 T  0362:3
     % NEW LUN INTO FIB.                                                     04684900 T  0365:1
     OLDU ← TINU[U].[3:5];                                                    04684950 T  0365:1
     % OLDU LOADED WITH NEW PHYSICAL UNIT NUMBER.                            04685000 T  0366:3
     IF NOT RC THEN                                                           04685050 T  0366:3
     BEGIN                                                                    04685100 T  0367:1
RESETUNITS;                                                                   04685150 T  0367:3
          IOQUE[S] ← (*P(DUP)) & OLDU[3:43:5];                                04685200 T  0367:3
          FINALQUE[S] ← (*P(DUP)) & OLDU[3:43:5];                             04685250 T  0370:1
          LOCATQUE[S] ← (*P(DUP)) & U[12:42:6];                               04685300 T  0372:3
          % RESET DESCRIPTORS IN IOQUE.                                       04685350 T  0375:1
          IF (S ← LOCATQUE[S].[FF])≠@77777 THEN GO RESETUNITS;                04685400 T  0375:1
     END;                                                                     04685450 T  0377:3
                                                                                         04685100
     FIB[16] ← (*P(DUP)) & OLDU[3:43:5];                                      04685500 T  0377:3
     FIB[19] ← (*P(DUP)) & OLDU[3:43:5];                                      04685550 T  0380:1
     % CHANGE UNIT FIELD OF DESCRIPTORS IN FIB.                              04685600 T  0382:3
     FIB[6] ← ((RC=0)×2)+HOLDCT;                                              04685650 T  0382:3
     % LOAD NEW BLOCK COUNT INTO FIB                                         04685700 T  0385:2
     FIB[7] ← (((RC=0)×2) × NUMRECS)+HOLDCT × NUMRECS+LOGICLRC;               04685750 T  0385:2
     % LOAD NEW RECORD COUNT                                                 04685800 T  0389:3
     TINU[U].[24:6] ← 0;                                                      04685850 T  0389:3
     UNIT[U].[5:10] ← 0;                                                      04685900 T  0392:1
     % RESET ERROR FLAGS.                                                    04685950 T  0394:3
     IF NOT DSED THEN                                                         04686000 T  0394:3
     BEGIN                                                                    04686050 T  0395:3
          STREAM(A←TINU[U], T←T2←SPACE(4));                                   04686100 T  0396:1
          BEGIN                                                               04686150 T  0399:2
               DS ← 26 LIT"#REEL SWITCH COMPLETED ON ";                       04686200 T  0399:2
               SI ← LOC A; SI ← SI+5; DS ← 3 CHR; DS ← LIT"←";                04686250 T  0403:0
          END;                                                                04686300 T  0404:1
                                                                                         04686150
          SPOUTER(T2,UNITNO,1);                                               04686350 T  0404:2
     END;                                                                     04686400 T  0406:0
                                                                                         04686050
     TOPIOD ← TEMP ← (IF RC THEN FIB[19] ELSE OIOD).[CF]-2;                   04686450 T  0406:0
     % MUST RESET LUN IN I/O BUFFER FOR PROGRAM RELEASE                       04686500 T  0410:0
ARN; M[TEMP] ← (*P(DUP)) & U[12:42:6];                                        04686550 T  0410:0
     IF M[TEMP].[FF]-2≠TOPIOD THEN                                            04686600 T  0412:3
     BEGIN                                                                    04686650 T  0415:1
          TEMP ← M[TEMP].[FF]-2;                                              04686700 T  0415:3
          GO ARN;                                                             04686750 T  0418:1
     END;                                                                     04686800 T  0420:0
```

```
                                                                                        04686650
     GO EXIT;                                                        04686850 T  0420:0
ERROROUT:                                                            04686900 T  0420:2
     STREAM(T+T2+SPACE(3));                                          04686950 T  0420:2
          DS + 21 LIT"#REEL SWITCH ABORTED+";                        04687000 T  0423:3
     SPOUTER(T2,UNITNO,1);                                           04687050 T  0427:0
     IF U < 0 THEN % JOB BEING DS-ED AT MT REQ                       04687100 T  0428:2
     BEGIN                                                           04687150 T  0429:1
          U + TEMP;                                                  04687200 T  0429:3
          % SET U TO LAST UNIT.                                      04687250 T  0430:2
          IF U=SAVEU THEN GO EXIT;                                   04687300 T  0430:2
          DSED + 1;                                                  04687350 T  0431:3
          GO KAPUT;                                                  04687400 T  0433:2
          % GO TO KAPUT TO CONTINUE HOUSE-KEEPING                    04687450 T  0434:0
     END;                                                            04687500 T  0434:0
                                                                                        04687150
EXIT:                                                                04687550 T  0434:0
     P1MIX + 0;                                                      04687600 T  0434:0
     IF FIRSTREC≠0 THEN                                              04687650 T  0434:3
     BEGIN                                                           04687700 T  0435:2
          FORGETSPACE(FIRSTREC-2);                                   04687750 T  0436:0
          FORGETSPACE(SECREC-2);                                     04687800 T  0437:1
     END;                                                            04687850 T  0438:2
                                                                                        04687700
     IF NOT NORMALPROCESS THEN NOPROCESSTOG + NOPROCESSTOG-1;        04687900 T  0438:2
     % WAS UNABLE TO FREE NORMAL PROCESS DUE TO UNFILLED BUFFERS.    04687950 T  0441:1
     % THIS SITUATION MAY NEVER OCCUR, BUT JUST IN CASE              04688000 T  0441:1
     WRITEPARITYREELSWITCH + UNIT[U] & MODE[5:40:8];                 04688050 T  0441:1
END WRITEPARITYREELSWITCH;                                           04688100 T  0443:1
                                                                                        04668400
                                                                              SIZE= 0444 WORDS
```

```
                    REAL PROCEDURE PLACEFINDER(S, A, L);                                    04700000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00107
                          VALUE S, A;                                               04701000 T  0000:0
                          REAL S, A, L;                                             04702000 T  0000:0
                       BEGIN INTEGER I;  ARRAY B[*];                                04703000 T  0000:0
STACK(F+2) = I
STACK(F+3) = B
                          REAL T, W, E, J, AA;                                      04704000 T  0000:0
STACK(F+4) = T
STACK(F+5) = W
STACK(F+6) = E
STACK(F+7) = J
STACK(F+10) = AA
                          LABEL NULL, FOUND, EXIT;                                  04705000 T  0000:0
                          LABEL SANDA; REAL SS;                                     04705500 T  0000:0
STACK(F+11) = SS
                          W ← -1;                                                   04706000 T  0000:0
                          B ← [M[T ← SPACE(30)]]&30[8:38:10];                       04707000 T  0003:1
                          SS:=S;                                                    04707500 T  0007:2
                          IF S=0 THEN                                               04708000 T  0008:1
                    NULL: BEGIN STREAM(T); DS:=20 LIT " "; GO EXIT; END;            04709000 T  0009:0
                                                                                                      04709000
                          DISKWAIT(-T,30,JAR[P1MIX,10]);                            04710000 T  0013:3
                          IF (JAR[P1MIX,10]=0) OR (AA←B[0].[FF])=0 THEN             04711000 T  0016:0
                    SANDA: BEGIN STREAM(S:=SS,A,K:=M[PRT[P1MIX,8]].[10:2],T);       04712000 T  0019:3
                               BEGIN DS←5 LIT ", S =";                              04713000 T  0023:3
                                     SI←LOC S;  DS←4 DEC;                           04714000 T  0024:3
                                     DS←5 LIT ", A =";                              04715000 T  0025:1
                                     DS←4 DEC;                                      04716000 T  0026:1
                                     DS:=LIT "!"; SI:=SI+7; DS:=CHR;                04716100 T  0026:2
                                     DI←T;  DI←DI+5;  DS←3 FILL;                    04717000 T  0027:2
                                     DI←T;  DI←DI+14;  DS←3 FILL;                   04718000 T  0028:1
                               END STREAM;                                          04719000 T  0029:0
                                                                                                      04713000
                               GO TO EXIT;                                          04720000 T  0029:1
                          END;                                                      04721000 T  0029:3
                                                                                                      04712000
                          DISKWAIT(-T,30,I:=JAR[P1MIX,AA DIV JAR[P1MIX,8]+10]+      04722000 T  0029:3
                               AA MOD JAR[P1MIX,8]+S DIV 30);                       04723000 T  0033:2
                          IF (J←B[S MOD 30])<0 THEN GO TO NULL;                     04725000 T  0037:0
                          AA ← I ← JAR[P1MIX,J.[CF] DIV JAR[P1MIX,8]+10]+           04726000 T  0039:2
                               J.[CF] MOD JAR[P1MIX,8];                             04727000 T  0042:3
                          I←0;  J←J.[FF];                                           04728000 T  0046:0
                          DO BEGIN S←(I+J).[36:11];                                 04729000 T  0048:0
                               IF W≠(W:=S DIV 30) THEN DISKWAIT(-T,30,AA+W);        04731000 T  0049:3
                               IF (E ← B[S-W×30].[38:10])=A THEN GO TO FOUND;       04732000 T  0054:0
                               IF E<A THEN I←S ELSE J←S;                            04733000 T  0057:2
                          END UNTIL J-I=1;                                          04734000 T  0060:3
                                                                                                      04729000
                          S←I;                                                      04735000 T  0062:2
                    FOUND: L ← -B[S MOD 30].[10:28];                                04736000 T  0063:1
                          IF L=0 THEN GO TO SANDA;                                  04736500 T  0065:3
                          STREAM(L←ABS(L),T);                                       04737000 T  0067:0
                          BEGIN DS:=11 LIT ",NEAR LINE ";                           04738000 T  0068:1
                               SI←LOC L;  DS←8 DEC;                                 04739000 T  0070:0
                               DS:=LIT " "; DI:=DI-9; DS:=7 FILL;                   04740000 T  0070:2
                          END STREAM;                                               04741000 T  0071:2
```

```
EXIT:   PLACEFINDER ← T;
    END PLACEFINDER;
```

```
                                                    04738000
04742000 T  0071:3
04743000 T  0072:2
                                                    04703000
                                          SIZE= 0073 WORDS
```

```
                $ SET OMIT = NOT(DATACOM )
               PROCEDURE LOGOUT(A); VALUE A; REAL A; FORWARD;

PRT(542) = LOGOUT
               PROCEDURE FORMTIME(W,T); VALUE W,T; REAL W,T;

                    BEGIN INTEGER S,M;

STACK(F+1) = S
STACK(F+2) = M

                         T←(T+60) DIV 60;
                         S←T MOD 60;
                         T←T DIV 60;
                         M←T MOD 60;
                         T←T DIV 60;
                         STREAM(T,M,S,W←[W]);
                              BEGIN SI←LOC T;  DS←2 DEC;
                                   2(DS←LIT ":";  DS←2 DEC);
                                   DI←W;  DS←7 FILL;
                              END;

                    END;
```

```
                                   04999999 T  000:0
          %154-                    05606900 C  000:0
START OF REL SEGMENT; DISK ADDRESS = 00110

          %154-                    05607000 P  000:0
START OF REL SEGMENT; DISK ADDRESS = 00110
          %154-                    05608000 C  000:0

          %154-                    05609000 C  000:0
          %154-                    05610000 C  002:1
          %154-                    05611000 C  003:2
          %154-                    05612000 C  004:3
          %154-                    05613000 C  006:0
          %154-                    05614000 C  007:1
          %154-                    05615000 C  008:3
          %154-                    05616000 C  009:1
          %154-                    05617000 C  010:2
          %154-                    05618000 C  011:0
                                                   05615000
          %154-                    05619000 C  011:1
                                                   05608000
                                        SIZE= 0012 WORDS
```

```
                PROCEDURE LOGSPACE(W,L); % THIS MAY ZIP                                                  05700000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00111
PRT(543) = LOGSPACE
                VALUE W,L; NAME W; INTEGER L;  % FIRST WORD,WORD COUNT                                   05701000 T  0000:0
                COMMENT THIS WILL CLOBBER WORDS AROUND THOSE LOGGED;                                    05701010 T  0000:0
                BEGIN INTEGER B,I,J,K,N; ARRAY A[*]; LABEL OK; DEFINE Z=LOGFREE#;                       05702000 T  0000:0
STACK(F+1) = B
STACK(F+2) = I
STACK(F+3) = J
STACK(F+4) = K
STACK(F+5) = N
STACK(F+6) = A

                    N←L DIV 5;  %NO REMAINDER ALLOWED                                                   05702500 T  0000:0
                    A:=M[B:=SPACE(30)]&30[8:38:10];                                                     05703000 T  0002:3
                    IF Z>0 THEN SLEEP([Z],-0); Z←-Z;                                                    05703500 T  0007:0
                 $ SET OMIT = NOT(SHAREDISK)                                                            05703699 T  0011:0
                    DISKWAIT(-B,30,Z);                                                                  05704000 T  0011:0
                IF (I←A[0])+6+N≥(J←A[1]) THEN BEGIN I←0; K←1 END  %WRAP AROUND                           05705000 T  0012:2
                                                                                                                        05705000
                ELSE IF I+N+100 GEQ J THEN                                                              05706000 T  0017:3
                    BEGIN INDEPENDENTRUNNER(P(.LOGOUT),1,128);                                          05706100 T  0020:0
                        K:=2;                                                                           05706200 T  0021:3
                    END                                                                                 05706300 T  0022:2
                                                                                                                        05706100
                ELSE IF I<J DIV 2 AND J DIV 2<I+N  THEN K←3  % HALF FULL                                05707000 T  0022:2
                ELSE GO TO OK;                                                                          05708000 T  0027:0
                    STREAM(K:=K-1, J:=J:=SPACE(3));                                                     05709000 T  0027:2
                    BEGIN CI:=CI+K; GO TO L2; GO TO L1;                                                 05710000 T  0031:0
                        DS:=14 LIT"#LOG HALF FULL"; GO TO L3;                                           05710500 T  0032:0
                    L1: DS:=19 LIT" LOG FULL - AUTO LN"; GO TO L3;                                      05711000 T  0034:1
                    L2: DS:=17 LIT"**LOG WRAP AROUND";                                                  05711500 T  0037:1
                    L3: DS:=LIT"←";                                                                     05712000 T  0039:3
                    END;                                                                                05713000 T  0040:1
                                                                                                                        05710000
                    SPOUT(J);                                                                           05714000 T  0040:2
                OK: A[0]←N+1; A[3]←K; A[2]←I←I+1;   %WE NOW PUT THE WORDS IN I                          05715000 T  0041:3
                    W[L]←4;      %    END OF LOG                                                        05715100 T  0047:0
                    J←(I MOD 6)×5;   %SIZE OF NEIGHBORHOOD (NBD)                                        05716000 T  0048:2
                 $ SET OMIT = NOT(SHAREDISK)                                                            05716999 T  0050:1
                    IF (I←I DIV 6)≠0 THEN DISKWAIT(B,30,Z);   %DUMP RECORD ZERO                         05722000 T  0050:1
                    IF J≠0 THEN   % GET  NBD                                                            05723000 T  0053:3
                    BEGIN IF I≠0 THEN DISKWAIT(-B,30,Z+I);                                              05724000 T  0054:2
                        MOVE(30-J,W INX 0,A INX J)                                                      05725000 T  0058:1
                    END                                                                                 05726000 T  0060:3
                                                                                                                        05724000
                    ELSE B:=W INX 0;                                                                    05727000 T  0061:2
                    DISKWAIT(B,30,Z+I);                                                                 05728000 T  0063:1
                    IF (L+J) GEQ 30 THEN                                                                05728100 T  0065:0
                    BEGIN K:=L-(J:=30-J)+1;                                                             05728120 T  0066:1
                        I:=I+1;                                                                         05728140 T  0069:2
                        DO                                                                              05728160 T  0070:3
                        BEGIN DISKWAIT(W INX J,IF K>1020 THEN 1020 ELSE K,Z+I);                         05728180 T  0070:3
                            J:=J+1020;                                                                  05728200 T  0075:0
                            I:=I+34;                                                                    05728220 T  0076:1
                        END UNTIL (K:=K-1020) LEQ 0;                                                    05728240 T  0077:2
                                                                                                                        05728180
                    END;                                                                                05728260 T  0079:3
```

```
$ SET OMIT = NOT(STATISTICS)
   FORGETSPACE(A);
$ SET OMIT = NOT(SHAREDISK )
   Z:=-Z;
END OF LOGSPACE;
```

```
                                                    05728120
05728299 T  0079:3
05729000 T  0079:3
05729199 T  0080:3
05729300 T  0080:3
05730000 T  0081:3
                                                    05702000
                                        SIZE= 0082 WORDS
```

```
DEFINE                                                                                  05780000 T  0000:0
      MAXSIZ=[1:20]#, TOMAXSIZ=1:28:20#,                                                05780010 T  0000:0
      SPEED = [23:3]#, TOSPEED= 23:45:3#,                                               05780020 T  0000:0
      EUNP = [21:1]#, TOEUNP = 21:47:1#,                                                05780025 T  0000:0
      STARTWRD=[26:12]#, TOSTARTWRD=26:36:12#,                                          05780030 T  0000:0
      NUMENT=[38:10]#, TONUMENT=38:38:10#, NUMENTM=1023#,                               05780040 T  0000:0
      DSIZE=[2:20]#, TODSIZE=2:28:20#,                                                  05780100 T  0000:0
      DEND=[22:26]#, TODEND=22:22:26#,                                                  05780200 T  0000:0
      TOSIZE=8:38:10#, NEUF=[18:15]#,                                                   05780300 T  0000:0
      EUIOFFSET=4 #, % ONE WORD FOR EACH I/O CHANNEL.                                   05780310 T  0000:0
      AVDIFFMIN=15#, AVDIFFMAX=50#, % AVDIFFMAX GTR AVDIFFMIN GTR 14.                   05780400 T  0000:0
      AVTMAX=3900#, % MAX # WORDS ALLOWED FOR AVAILABLE TABLE ON DISK.                  05780500 T  0000:0
                    % IS REFLECTED IN USERDISKBOTTOM & DISKAVAILTABLEMAX                05780505 T  0000:0
      AVSMIN=90 #, AVSMAX=300#, % MIN AND MAX # WORDS TO READ IN @ 1 TIM                05780600 T  0000:0
                                % AVSMAX GTR AVSMIN GTR 85,                            05780605 T  0000:0
                                % BOTH MUST BE MULTIPLES OF 30.                        05780610 T  0000:0
      FIXARRAY(FIXARRAY1,FIXARRAY2,FIXARRAY3)=FIXARRAY1←[M[FIXARRAY2←                   05780700 T  0000:0
      SPACE(FIXARRAY3)]]&FIXARRAY3[TOSIZE]# ;                                           05780800 T  0000:0
 $ SET OMIT = NOT(SHAREDISK )                                                           05800000 T  0000:0
REAL PROCEDURE PETUSERDISK(N,T); VALUE N,T; REAL N,T ;                                  05839400 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00114
% N IS THE NUMBER OF SEGMENTS REQUESTED, AND T IS THE EU# OR THE SPEED#.                 05839600 T  0000:0
% GETUSERDISK WILL RETURN -1, 0, OR THE ABSOLUTE DISK SEGMENT ADDRESS OF                 05839700 T  0000:0
% THE RESULTANT AREA. SEE T.[2:1] FOR THE -1, AND N.[2:1] FOR THE 0.                    05839800 T  0000:0
% T>0 => T IS A PREFERRED SPEED#: T=1,2,3,4,...., OR 31.                               05840000 T  0000:0
% T<0 => -T IS A PREFERRED EU#: T=-1,-2,-3,-4,...., OR -20.                            05840100 T  0000:0
% T=0 => DONT CARE ABOUT SPEED# OR EU#, USE EU WITH LEAST EU I/O.                       05840200 T  0000:0
% T.[2:1]=1 => IF CANT GET PREFERRED SPEED# OR EU#, RETURN -1.                          05840300 T  0000:0
% T.[2:1]=0 => IF CANT GET PREFERRED SPEED# OR EU#, TREAT AS T=0 (ABOVE)                05840400 T  0000:0
% N>0 => MAKE A SCRATCHDIRECTORY ENTRY.                                                05840500 T  0000:0
% N<0 => DONT MAKE A SCRATCHDIRECTORY ENTRY.                                           05840600 T  0000:0
% N=0 => IMMEDIATELY RETURN WITH A 0.                                                  05840700 T  0000:0
% N.[2:1]=0 => IF CANT FIND ANY USERDISK, AND T.[2:1]=0, NO-USER-DISK.                  05840800 T  0000:0
% N.[2:1]=1 => IF CANT FIND ANY USERDISK, AND T.[2:1]=0, RETURN 0.                     05840900 T  0000:0
    BEGIN                                                                               05841200 T  0000:0
    INTEGER K=+1, % K IS ALSO "GETUSERDISK"; DONT USE K ABOVE LABEL D.                  05841300 T  0000:0
STACK(F+1) = K
            Z=K+1, NS=Z+1, I=NS+1,                                                      05841350 T  0000:0
STACK(F+2) = Z
STACK(F+3) = NS
STACK(F+4) = I
    $ SET OMIT = NOT(SHAREDISK )                                                        05841380 T  0000:0
    $ SET OMIT = SHAREDISK                                                              05841610 T  0000:0
            R=I+1, AVS=R+1, J=AVS+1, H=NT6, L=AVS ;                                     05841615 T  0000:0
STACK(F+5) = R
STACK(F+6) = AVS
STACK(F+7) = J
PRT(165) = H
STACK(F+6) = L
    REAL M1=NT5, M2=NT4; ARRAY UT=J+1[*]; DEFINE U=AVTABLE # ;                          05841620 T  0000:0
PRT(164) = M1
PRT(163) = M2
STACK(F+10) = UT
    $ POP OMIT                                                                          05841621 T  0000:0
    LABEL A,B,C,D,E,F,G,W ;                                                             05841650 T  0000:0
    DEFINE GETUSERDISK=PETUSERDISK#;%***************************************           05841700 T  0000:0
    IF N=0 THEN GO W ;                                                                  05842100 T  0000:0
```

```
    P(T,[2:1],ABS(N),1,0,0,0,0) ;                                                    05842200 T  0001:2
 $ SET OMIT = NOT(SHAREDISK )                                                        05842205 T  0004:0
A: SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                               05842300 T  0004:0
                                                                                                 05842300
 $ SET OMIT = NOT(SHAREDISK )                                                        05842390 T  0009:0
 $ SET OMIT = SHAREDISK                                                              05842405 T  0009:0
    M1:=M2:=P(D) ;                                                                   05842410 T  0009:0
 $ POP OMIT                                                                          05842411 T  0010:1
    L:=NEUP,NEUF ;                                                                   05842450 T  0010:1
    IF T LSS 0 THEN IF U[J:=IF -T GTR L THEN L+1 ELSE -T].MAXSIZ GEQ NS              05842475 T  0011:2
                    THEN GO E ELSE IF Z THEN GO C ;                                  05842500 T  0017:1
B:  IF U[].MAXSIZ≥NS THEN                                                            05842700 T  0019:1
         BEGIN                                                                       05842800 T  0020:3
         P(EUIO[(NT1:=I-1)+EUIOFFSET]+PEUIO[NT1],,NT2,SND,DUP) ;                     05842900 T  0021:1
         IF P LSS M1 THEN BEGIN M1:=NT2; H:=NT1 END ;                                05842930 T  0024:3
                                                                                                 05842930
         IF P LSS M2 THEN IF U[].SPEED=T THEN BEGIN M2:=NT2;J:=NT1 END;              05843000 T  0027:1
                                                                                                 05843000
         END ;                                                                       05843100 T  0031:3
                                                                                                 05842800
    IF (I:=I+1) LEQ L THEN GO B ;                                                    05843200 T  0031:3
    IF P(D)≠M1 THEN                                                                  05843300 T  0034:0
         BEGIN                                                                       05843400 T  0034:3
         IF M2=M2:=P(D) THEN IF Z AND T≠0 THEN                                       05843500 T  0035:1
C:            BEGIN GETUSERDISK←-1; GO G END                                        05843600 T  0038:1
                                                                                                 05843600
         ELSE J←H ;                                                                  05843700 T  0040:1
         J:=J+1;  GO E ;                                                             05843800 T  0041:2
         END ;                                                                       05843900 T  0043:1
                                                                                                 05843400
    IF Z THEN GO C ;                                                                 05843950 T  0043:1
    IF N,[2:1] THEN GO G ;                                                           05844000 T  0044:1
 $ SET OMIT = NOT(SHAREDISK )                                                        05844050 T  0045:3
 $ SET OMIT = SHAREDISK                                                              05844090 T  0045:3
    FIXARRAY(UT,R,30); USERDISKSPECIALCASE(I:=1,R,UT,NS); GO A ;                     05844110 T  0045:3
 $ POP OMIT                                                                          05844111 T  0052:3
D:::@0777777777777777 ;                                                              05844200 T  0052:3
 $ SET OMIT = NOT(SHAREDISK )                                                        05844290 T  0054:0
 $ SET OMIT = SHAREDISK                                                              05844915 T  0054:0
F:  IF (AVS:=(K:=(T:=U[J] AND NUMENTM)+I:=(Z:=U[J].STARTWRD) MOD 30) MOD              05844920 T  0054:0
       30) NEQ 0 THEN AVS:=30-AVS;  AVS:=AVS+K;  P(M2) ;                             05844925 T  0058:3
    FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,Z←Z DIV 30+USERDISKBOTTOM) ;                  05844930 T  0063:2
    M2:=P;  P(K-1); NT2:=0;  NT3:=K:=U[J].MAXSIZ ;                                   05844935 T  0070:3
 $ POP OMIT                                                                          05844936 T  0074:3
F:  IF (NT1←UT[I].DSIZE)>NT2 THEN IF NT1≠K THEN NT2←NT1 ELSE K:=0 ;                  05845000 T  0074:3
    IF NT1≥NS THEN IF NT1<M2 THEN BEGIN M2←NT1; H←I END ;                            05845100 T  0080:2
                                                                                                 05845100
    IF P(DUP) GTR I:=I+1 THEN GO F ;                                                 05845200 T  0084:2
    UT[H].DSIZE←NS←M2-NS ;                                                           05845300 T  0086:3
    IF M1:=M2=NT3 THEN U[J].MAXSIZ:=IF NT2>NS THEN NT2 ELSE NS ;                     05845400 T  0090:1
    GETUSERDISK←UT[H].DEND-M2;  I:=P ;                                               05845500 T  0096:2
 $ SET OMIT = NOT(SHAREDISK )                                                        05845590 T  0099:0
    IF N←NS=0 THEN BEGIN MOVE(I-H,[UT[H+1]],[UT[H]]);U[J],NUMENT←T-1END;             05845700 T  0099:0
                                                                                                 05845700
 $ SET OMIT = NOT(SHAREDISK )                                                        05845790 T  0106:3
 $ SET OMIT = SHAREDISK                                                              05846350 T  0106:3
    DISKWAIT(R,AVS,Z) ;                                                              05846360 T  0106:3
```

```
 $ POP OMIT
 $ SET OMIT = NOT(SHAREDISK )
 $ SET OMIT = SHAREDISK
   FORGETSPACE(R) ;
G: UNLOCKTOG(USERDISKMASK);

 $ POP OMIT
W:  END OF GETUSERDISK ;
```

```
05846361 T  0108:0
05846370 T  0108:0
05846385 T  0108:0
05846390 T  0108:0
05846395 T  0108:3
                   05846395
05846396 T  0112:1
05846500 T  0112:1
                   05841200
        SIZE= 0113 WORDS
```

```
                    PROCEDURE FORGETUSERDISK(A,N);  VALUE A,N;  REAL A,N ;                                  05846600 T  000010
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00118
                    % A IS THE ABSOLUTE DISK SEGMENT ADDRESS OF AN AREA N SEGMENTS LONG                       05846800 T  000010
                    % WHICH IS TO BE MADE AVAILABLE AGAIN.                                                   05846900 T  000010
                    % N<0 => MAKE A SCRATCHDIRECTORY DELETION.                                               05847000 T  000010
                    % N>0 => DONT MAKE A SCRATCHDIRECTORY DELETION.                                          05847100 T  000010
                    % N=0 => IMMEDIATELY GO AWAY ;                                                           05847200 T  000010
                        BEGIN                                                                               05847400 T  000010
                     $ SET OMIT = NOT(SHAREDISK )                                                           05847490 T  000010
                     $ SET OMIT = SHAREDISK                                                                 05847590 T  000010
                        INTEGER AVS,F=AVS;  ARRAY UT[*];  DEFINE U=AVTABLE #;                               05847600 T  000010
STACK(F+1) = AVS
STACK(F+1) = F
STACK(F+2) = UT
                     $ POP OMIT                                                                             05847601 T  000010
                        REAL E;  INTEGER B,C,D,I,J,R,S,H=NT7,K=NT6,L=NT5,G=NT4,T=NT3,Q=JUNK;                05847700 T  000010
STACK(F+3) = E
STACK(F+4) = B
STACK(F+5) = C
STACK(F+6) = D
STACK(F+7) = I
STACK(F+10) = J
STACK(F+11) = R
STACK(F+12) = S
PRT(166) = H
PRT(165) = K
PRT(164) = L
PRT(163) = G
PRT(162) = T
                        LABEL V,W,X,Y,Z,AZ,BZ,CZ,DZ ;                                                       05847800 T  000010
PRT(5) = Q
                        SUBROUTINE SETSHIFT ;                                                               05847900 T  000010
                             BEGIN                                                                          05848000 T  000110
                             S:=P(XCH) ;                                                                    05848100 T  000110
                     $ SET OMIT = NOT(SHAREDISK )                                                           05848190 T  000113
                     $ SET OMIT = SHAREDISK                                                                 05848250 T  000113
                             U[J].STARTWRD:=I+S;  G:=D+S ;                                                  05848255 T  000113
                     $ POP OMIT                                                                             05848256 T  000610
                             K:=G+C-1 ;                                                                     05848300 T  000610
                             END OF SETSHIFT ;                                                              05848500 T  000713
                                                                                                                     05848000
                        IF N=0 OR (J:=A DIV 1000000) GEQ NEUP,NEUF                                          05848900 T  000810
                           OR A LSS USERDISKBOTTOM+DISKAVAILTABLEMAX THEN GO BZ ;                           05849000 T  001212
                        SLEEP(TOGLE,USERDISKMASK); LOCKTOG(USERDISKMASK);                                   05849300 T  001610
                                                                                                                     05849300
                     $ SET OMIT = NOT(SHAREDISK )                                                           05849390 T  002110
                        IF (D:=U[0].MAXSIZ) NEQ 0 AND N GTR 0 THEN IF (TWO(J) AND D) NEQ 0                  05849420 T  002110
                        THEN BEGIN USERDISKSPECIALCASE(3,N,U,A); IF NOT P THEN GO DZ END ;                  05849460 T  002513
                                                                                                                     05849460
                        J:=J+1 ;                                                                            05849480 T  002911
                    V:  D←(I←(F←U[J]).STARTWRD) MOD 30 ;                                                    05849500 T  003012
                     $ SET OMIT = NOT(SHAREDISK )                                                           05849590 T  003312
                     $ SET OMIT = SHAREDISK                                                                 05850105 T  003312
                        AVS:=30-(S:=(C:=E AND NUMFNTM)+D) MOD 30+S ;                                        05850110 T  003312
                        FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,B:=I DIV 30+USERDISKBOTTOM) ;                   05850120 T  003713
                        K:=S;  L:=D;  S:=I+C ;                                                              05850130 T  004510
                     $ POP OMIT                                                                             05850131 T  004713
```

```
    G←I←(NT2:=(P(UrJ-1],DUP) AND NUMENTM)+P(XCH),STARTWRD) ;                    05850200 T  0047:3
    S←UrJ+1],STARTWRD←S;  H←K←K-1;  IF UT[T←L],DEND≥A THEN GO X ;               05850300 T  0052:0
W:  IF UT[T←(H+L+1)DIV 2],DEND≥A THEN IF UT[H←T-1],DEND≥A THEN GO W ELSE         05850400 T  0058:3
    ELSE IF UT[T←T+1],DEND<A THEN BEGIN L←T+1; GO W END ;                       05850500 T  0065:1
                                                                                         05850500
X:  IF (L:=A+ABS(N)) GEQ H:=P(UT[Q:=T],DUP),DEND-P(XCH),DSIZE THEN GO Z;        05850600 T  0072:3
    IF S=0 THEN                                                                 05850700 T  0077:3
         BEGIN                                                                  05850800 T  0079:0
 $ SET OMIT = NOT(SHAREDISK )                                                   05850890 T  0079:2
 $ SET OMIT = SHAREDISK                                                         05851215 T  0079:2
         IF G=0 OR D=0 THEN GO Y;  IF P((G+1)DIV 2,DUP)>D THEN P(DEL,D);        05851220 T  0079:2
 $ POP OMIT                                                                     05851221 T  0085:0
         P(SSN);SETSHIFT;MOVE(C,[UT[G-S]],[UT[G]]);T←Q←T+S;                     05851300 T  0085:0
         END ;                                                                  05851400 T  0090:1
                                                                                         05850800
    FOR H←K STEP -1 UNTIL T DO UT[H+1]←UT[H];  H←ABS(N);  GO AZ ;               05851500 T  0090:1
Y: USERDISKSPECIALCASE(2,E,UT,J) ;                                              05851600 T  0096:3
 $ SET OMIT = NOT(SHAREDISK )                                                   05851650 T  0098:2
    GO V ;                                                                      05851675 T  0098:2
Z:  IF P(UT[Q←Q+1],DUP),DEND-P(XCH),DSIZE≤L THEN GO Z ;                         05851700 T  0099:0
    IF P(UT[NT1:=Q-1],DEND,DUP) LSS L THEN P(DEL,L) ;                           05851800 T  0103:1
    H:=(L:=P)-(IF A LSS H THEN A ELSE H) ;                                      05851850 T  0107:0
    IF NT1 GTR T THEN MOVE(K-NT1,[UT[Q]],[UT[T+1]]) ;                           05851900 T  0110:2
AZ: UT[T]←L&H[TODSIZE];  C←(Q←T-Q+1)+C ;                                        05852000 T  0114:3
    IF(S←S-Q)>T←IF AVDIFFMAX>T←C DIV 2 THEN AVDIFFMAX ELSE T THEN IF J=1        05852100 T  0119:3
    OR S+G>T←(IF AVDIFFMAX>T←NT2 DIV 2 THEN AVDIFFMAX ELSE T) THEN GO Y         05852200 T  0125:3
    ELSE BEGIN                                                                  05852300 T  0131:1
         IF (NT1←F-1-K)=0 THEN GO Y;                                            05852350 T  0132:0
         IF P((S+G) DIV 2,DUP) GTR NT1 THEN P(DEL,NT1);SETSHIFT;                05852400 T  0134:3
         FOR NT1←K STEP -1 UNTIL G DO UT[NT1]←UT[NT1-S] ;                       05852500 T  0139:0
         END ;                                                                  05852600 T  0144:1
                                                                                         05852300
    U[J]←(NT1←U[J])&C[TONUMENT]&(IF E←(NT1←NT1,MAXSIZ)<H THEN H ELSE             05852700 T  0144:1
         NT1)[TOMAXSIZ] ;                                                       05852800 T  0150:1
 $ SET OMIT = NOT(SHAREDISK )                                                   05852890 T  0151:3
 $ SET OMIT = SHAREDISK                                                         05853420 T  0151:3
    DISKWAIT(R,AVS,B) ;                                                         05853425 T  0151:3
 $ POP OMIT                                                                     05853426 T  0153:0
 $ SET OMIT = NOT(SHAREDISK )                                                   05853490 T  0153:0
 $ SET OMIT = SHAREDISK                                                         05853593 T  0153:0
    FORGETSPACE(R) ;                                                            05853595 T  0153:0
DZ: UNLOCKTOG(USERDISKMASK);                                                    05853600 T  0153:3
                                                                                         05853600
 $ POP OMIT                                                                     05853601 T  0157:1
BZ: END OF FORGETUSERDISK ;                                                     05853700 T  0157:1
                                                                                         05847400
                                                                                SIZE= 0158 WORDS
```

```
                PROCEDURE OKBUSINESS(BUFF); VALUE BUFF; REAL BUFF;                                  05950000 T  00010
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00124
PRT(544) = OKBUSINESS
                BEGIN                                                                               05950200 T  00010
                    REAL RCW=+0,                                                                    05950400 T  00010
STACK(F+0) = RCW
                         MSCW=-2,                                                                   05950500 T  00010
STACK(F-2) = MSCW
                         MID=RCW+1,                                                                 05950600 T  00010
STACK(F+1) = MID
                         FID=MID+1,                                                                 05950800 T  00010
STACK(F+2) = FID
                         TMID=FID+1,                                                                05950900 T  00010
STACK(F+3) = TMID
                         TFID=TMID+1,                                                               05950950 T  00010
STACK(F+4) = TFID
                         A=TFID+1,                                                                  05951000 T  00010
STACK(F+5) = A
                         B=A+1;                                                                     05951200 T  00010
STACK(F+6) = B
                    INTEGER N=B+1;                                                                  05951400 T  00010
STACK(F+7) = N
                    ARRAY HD=N+1[*];                                                                05951600 T  00010
STACK(F+10) = HD
                    BOOLEAN RDT=HD+1;                                                               05951700 T  00010
STACK(F+11) = RDT
                    INTEGER C=RDT+1,D=C+1,I=D+1,J=I+1,R=J+1,S=R+1,                                  05951800 T  00010
STACK(F+12) = C
STACK(F+13) = D
STACK(F+14) = I
STACK(F+15) = J
STACK(F+16) = R
STACK(F+17) = S
                         LA=S+1,SA1=NT2,                                                            05951900 T  00010
STACK(F+20) = LA
PRT(161) = SA1
                         H=NT7,K=NT6,L=NT5,G=NT4,T=NT3,Q=JUNK;                                      05952000 T  00010
PRT(166) = H
PRT(165) = K
PRT(164) = L
PRT(163) = G
PRT(162) = T
PRT(5) = Q
                    REAL F=LA+1;                                                                    05952200 T  00010
STACK(F+21) = E
                    REAL KTR=B;                                                                     05952210 T  00010
STACK(F+6) = KTR
                    REAL TYPE=C;                                                                    05952220 T  00010
STACK(F+12) = TYPE
                    REAL WORD=D;                                                                    05952230 T  00010
STACK(F+13) = WORD
                    REAL HA=J;                                                                      05952240 T  00010
STACK(F+15) = HA
                    REAL HEADER=R;                                                                  05952250 T  00010
STACK(F+16) = HEADER
                    ARRAY HDR=E[*];                                                                 05952260 T  00010
STACK(F+21) = HDR
```

```
                    BOOLEAN FILTOG=E+1;                                                                 05952270 T  0000:0
STACK(F+22) = FILTOG
                    REAL SEGS=FILTOG+1;                                                                 05952300 T  0000:0
STACK(F+23) = SEGS
                  $ SET OMIT = SHAREDISK                                                                05952399 T  0000:0
                    ARRAY UT=HDR[*]; INTEGER AVS=SEGS+1; DEFINE U=AVTABLE#;                             05952400 T  0000:0
STACK(F+10) = UT
STACK(F+24) = AVS
                    INTEGER SLEEPER=AVS+1;                                                              05952500 T  0000:0
STACK(F+25) = SLEEPER
                  $ POP OMIT                                                                            05952501 T  0000:0
                  $ SET OMIT = NOT(SHAREDISK)                                                           05952505 T  0000:0
                    LABEL V,W,X,Y,Z,AZ,BZ,CZ,INUSE,EXIT;                                               05952600 T  0000:0
                    LABEL FILEID,XDFILE,CONFLICT,FOUND,MSG,FINIS;                                       05952620 T  0000:0
                  $ SET OMIT = NOT(SHAREDISK)                                                           05952690 T  0000:0
                    REAL SUBROUTINE DECWORD;                                                            05952705 T  0000:0
                    BEGIN                                                                               05952710 T  0001:0
                         STREAM(T←0:W←[WORD]);                                                          05952715 T  0001:0
                         BEGIN                                                                          05952720 T  0002:1
                              SI←W; DI←LOC T; DS←8DFC;                                                  05952725 T  0002:1
                         END STREAM;                                                                    05952730 T  0003:0
                                                                                                                     05952720
                         DECWORD←P;                                                                     05952735 T  0003:1
                    END DECWORD;                                                                        05952740 T  0003:2
                                                                                                                     05952710
                    SUBROUTINE SCAN;                                                                    05952745 T  0003:3
                    BEGIN                                                                               05952750 T  0004:0
                         STREAM(KTR,TYPE←0:T←0,W←[WORD]);                                               05952755 T  0004:0
                         BEGIN                                                                          05952760 T  0005:3
                              SI←KTR;                                                                   05952765 T  0005:3
L0:                           IF SC=" " THEN BEGIN SI←SI+1; GO L0; END;                                 05952770 T  0006:0
                                                                                                                     05952770
                              IF SC="""" THEN   % STRING IDENTIFIER                                     05952775 T  0007:0
                              BEGIN                                                                     05952780 T  0007:2
                                   SI←SI+1; DS←LIT"0";                                                  05952785 T  0007:2
                                   IF SC="""" THEN                                                      05952790 T  0008:1
                                   BEGIN                                                                05952795 T  0008:3
                                        SI←SI+1;                                                        05952800 T  0008:3
                                        IF SC="""" THEN DS←CHR ELSE DS←LIT" ";                          05952805 T  0009:0
                                        DS←6LIT" ";                                                     05952810 T  0010:2
                                   END ELSE                                                             05952815 T  0011:2
                                                                                                                     05952795
                                   BEGIN                                                                05952820 T  0011:3
                                        7(IF SC≠"""" THEN DS←CHR ELSE DS←LIT" ");                       05952825 T  0011:3
L1:                                     IF SC≠"""" THEN BEGIN SI←SI+1; GO L1; END;                      05952830 T  0013:3
                                                                                                                     05952830
                                        SI←SI+1;                                                        05952835 T  0014:3
                                   END;                                                                 05952840 T  0015:0
                                                                                                                     05952820
                                   GO T1;                                                               05952845 T  0015:0
                              END;                                                                      05952850 T  0015:1
                                                                                                                     05952780
                              IF SC=ALPHA THEN IF SC LSS "0" THEN                                       05952855 T  0015:1
                              BEGIN              % IDENTIFIER                                           05952860 T  0016:1
ID:                           DS←LIT"0";                                                                05952865 T  0016:1
                              7(IF SC=ALPHA THEN DS←CHR ELSE DS←LIT" ");                                05952870 T  0016:3
L2:                           IF SC=ALPHA THEN BEGIN SI←SI+1; GO L2; END;                               05952875 T  0018:3
```

```
                                                                                        05952875
T1:                  TALLY←1;                                          05952880 T  0019:3
                     GO EXT;                                           05952885 T  0020:0
                END;                                                   05952890 T  0020:1
                                                                                        05952860
                IF SC=ALPHA THEN IF SC LEQ "9" THEN                    05952895 T  0020:1
                BEGIN              % NUMBER                            05952900 T  0021:1
                     SI←SI+1; TALLY←1;                                 05952905 T  0021:1
                     7(IF SC=ALPHA THEN IF SC LSS "0" THEN             05952910 T  0021:3
                     BEGIN T←TALLY; SI←SI-T; JUMP OUT TO ID; END       05952915 T  0023:0
                                                                                        05952915
                     ELSE IF SC LEQ "9" THEN                           05952920 T  0024:1
                     BEGIN SI←SI+1; TALLY←TALLY+1; END);               05952925 T  0025:0
                                                                                        05952925
                     T←TALLY; SI←SI-T; DS←T OCT;                       05952930 T  0025:3
                     TALLY←2;                                          05952935 T  0027:0
                     GO EXT;                                           05952940 T  0027:1
                END;                                                   05952945 T  0027:2
                                                                                        05952900
                IF SC≠"←" THEN TALLY←3 ELSE TALLY←5;                   05952950 T  0027:2
                DS←7 LIT"0"; DS←CHR;                                   05952955 T  0028:3
EXT:            TYPE←TALLY;                                            05952960 T  0030:1
                KTR←SI;                                                05952965 T  0030:2
           END STREAM;                                                 05952970 T  0030:3
                                                                                        05952760
           P(.TYPE,STD,.KTR,STD);                                      05952975 T  0031:0
      END SCAN;                                                        05952980 T  0032:0
                                                                                        05952750
      SUBROUTINE MLOGIT;                                               05952985 T  0032:1
      BEGIN                                                            05952990 T  0033:0
           S←TYPEDSPACE(15,MAINTBUFFAREAV);%                  %167-    05952995 P  0033:0
           STREAM(B:DATE,D←S+1);                                       05953000 T  0035:1
           BEGIN                                                       05953005 T  0037:1
                SI←LOC DATE; DS←8 OCT; DI←DI+8;                        05953010 T  0037:1
                SI←B;                                                  05953015 T  0038:0
                2(63(IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2 TO LL));    05953020 T  0038:1
LL:             DS←LIT"←"; DI←DI-1; B←DI;                              05953025 T  0041:0
           END STREAM;                                                 05953030 T  0042:0
                                                                                        05953005
           LA← P INX 0;                                                05953035 T  0042:1
           M[S]← (LA-S) DIV 5;                                         05953040 T  0043:1
           M[S+2]←IF FILTOG THEN -N ELSE SEGS;                         05953045 T  0045:3
           LINKUP(18,S);                                               05953050 T  0049:2
      END MLOGIT;                                                      05953055 T  0050:2
                                                                                        05952990
      SUBROUTINE ENTERFILE;                                            05953060 T  0050:3
      BEGIN                                                            05953065 T  0051:0
           FIXARRAY(HD,B,30);                                          05953070 T  0051:0
           MOVE(30,HD-1,HD);                                           05953075 T  0055:1
           HD[0]←@3600036000101;                                       05953080 T  0057:3
           STREAM(DATE,XCLOCK,H←HD INX 3);                             05953085 T  0059:0
           BEGIN                                                       05953090 T  0061:0
                SI←LOC DATE; DS←8OCT;                                  05953095 T  0061:0
                DI←DI-20; SI←SI+4; DS←4CHR;                            05953100 T  0061:2
                DI←DI-7; SI←H; SI←SI+5; DS←3CHR;                       05953105 T  0062:1
                DI←H; DS←2LIT"+#"; SI←SI-3; DS←3CHR;                   05953110 T  0063:1
           END STREAM;                                                 05953115 T  0064:2
```

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                                                                                                                    05953090
            HD[4],[42:1]:=1; % MAKE FILE NON-MOVEABLE                                                   05953117 T  0064:3
            HD[7]←(HD[8]←N)"(HD[9]←1);                                                                  05953120 T  0067:1
            HD[10]←A;                                                                                   05953125 T  0071:0
            ENTERUSERFILE(MID,FID,[6:42],B"1);                                                          05953130 T  0072:1
            STREAM(MID,FID,N,TMID,TFID,FILTOG,                                                          05953135 T  0075:1
            B←IF FILTOG THEN B ELSE BUFF);                                                              05953140 T  0077:0
            BEGIN                                                                                       05953145 T  0079:0
                 SI←LOC N; DI←LOC N; DS←8DEC;                                                           05953150 T  0079:0
                 DI←LOC N; DS←7FILL; DI←B;                                                              05953155 T  0079:3
                 DS←LIT" "; SI←LOC MID; SI←SI+1; DS←7CHR;                                               05953160 T  0080:2
                 DS←LIT"/"; SI←SI+1; DS←7CHR;                                                           05953165 T  0081:3
                 DS←6LIT" SEGS="; DS←8CHR; DS←8LIT" CREATED";                                           05953170 T  0082:3
                 FILTOG(DS←6LIT" FROM "; SI←SI+1; DS←7CHR;                                              05953175 T  0085:1
                 DS←LIT"/"; SI←SI+1; DS←7CHR);                                                          05953180 T  0087:1
                 DS←LIT"←";                                                                             05953185 T  0088:2
            END STREAM;                                                                                 05953190 T  0089:0
                                                                                                                    05953145
            IF FILTOG THEN                                                                              05953195 T  0089:1
            BEGIN                                                                                       05953200 T  0089:2
                 MLOGIT;                                                                                05953205 T  0090:0
                 SPOUT(B);                                                                              05953210 T  0091:0
            END ELSE                                                                                    05953215 T  0092:1
                                                                                                                    05953200
            FORGETSPACE(B);                                                                             05953220 T  0092:1
       END ENTERFILE;                                                                                   05953225 T  0094:3
                                                                                                                    05953065
       P(0,0,0,0,0,BUFF,DUP); BUFF←P,[15:15]"1; P(0,0,B LSS 0);                                         05953350 T  0095:0
       P(0,0,0,0,0,0,0,0,0,0,0);                                                                        05953360 T  0099:2
  $ SET OMIT = NOT(SHAREDISK);                                                                          05953369 T  0102:1
       IF B.[CF]=0 THEN% MAKE RESERVE/DISK                                                              05953400 T  0102:1
       BEGIN MID:="RESERVE"; FID:="DISK    ";                                                           05953600 T  0103:2
            IF (A:=DIRECTORYSEARCH("MID,FID,5))≠0 THEN                                                  05953800 T  0105:2
            BEGIN STREAM(BUFF);                                                                         05954000 T  0108:0
                 DS:=30LIT" RESERVE/DISK ALREADY PRESENT←";                                             05954200 T  0109:1
                 GO TO EXIT;                                                                            05954400 T  0113:2
            END;                                                                                        05954600 T  0116:0
                                                                                                                    05954000
            IF (A←GETUSERDISK((N←RESERVEDISKSIZE)&1[2:47:1]))=0 THEN                                    05954800 T  0116:0
            BEGIN STREAM(BUFF);                                                                         05955000 T  0119:2
                 DS:=32LIT"**NO USER DISK FOR RESERVE/DISK←";                                           05955200 T  0120:3
                 GO TO EXIT;                                                                            05955400 T  0125:1
            END;                                                                                        05955600 T  0127:0
                                                                                                                    05955000
            GO TO CZ;                                                                                   05955800 T  0127:0
       END;                                                                                             05956000 T  0127:2
                                                                                                                    05953600
       IF RDT THEN                                                                                      05956250 T  0127:2
       BEGIN P(B); A:=M[BUFF INX 0]; N:=M[BUFF INX 1]; END ELSE                                         05956300 T  0127:3
                                                                                                                    05956300
       BEGIN                                                                                            05956350 T  0132:2
       SCAN;                                                                                            05956400 T  0133:0
       IF TYPE=1 THEN % IDENTIFIER                                                                      05956450 T  0134:0
       BEGIN                                                                                            05956500 T  0134:3
            TMID←WORD;                                                                                  05956550 T  0135:1
            SCAN; IF WORD≠"/" THEN GO EXIT;                                                             05956600 T  0136:0
  FILEID;                                                                                               05956650 T  0138:1
```

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      SCAN; IF NOT(TYPE=1 OR TYPE=2) THEN GO EXIT;                          05956700 T  0138:1
      TFID←IF TYPE=2 THEN DECWORD ELSE WORD;                                05956750 T  0141:1
      FILTOG←TRUE;                                                          05956800 T  0145:1
      SCAN;                                                                 05956850 T  0146:0
END;                                                                        05956900 T  0147:0
                                                                                        05956500
IF TYPE=2 THEN % NUMBER                                                     05956950 T  0147:0
BEGIN                                                                       05957000 T  0147:3
      A←WORD;                                                               05957050 T  0148:1
      SCAN;                                                                 05957100 T  0149:0
      IF TYPE=3 THEN IF WORD="/" THEN                                       05957150 T  0150:0
      BEGIN                                                                 05957200 T  0152:0
            WORD←A;                                                         05957250 T  0152:2
            A←0;                                                            05957300 T  0153:1
            TMID←DECWORD;                                                   05957350 T  0154:0
            GO FILEID;                                                      05957400 T  0155:2
      END ELSE SCAN;                                                        05957450 T  0156:0
                                                                                        05957200
      IF TYPE=2 THEN N←WORD;                                                05957500 T  0158:0
END;                                                                        05957550 T  0160:0
                                                                                        05957000
END;                                                                        05957600 T  0160:0
                                                                                        05956350
SEGS←N←N+(N=0);                                                             05957650 T  0160:0
IF A≠0 THEN                                                                 05957700 T  0162:1
BEGIN                                                                       05957750 T  0163:0
STREAM(A,D:=[FID1]);                                                        05958600 T  0163:2
BEGIN S1:=LOC A; DS:=8 DEC; END;                                            05958800 T  0164:2
                                                                                        05958800
IF (J:=A DIV 1000000) GEQ NEUP.NEUF OR A LSS DIRECTORYTOP+4 THEN            05959000 T  0165:1
V:  BEGIN STREAM(FID,BUFF);                                                 05959200 T  0169:0
      BEGIN DS:=22LIT" INVALID DISK ADDRESS ";                              05959400 T  0170:2
            SI:=LOC FID; DS:=8CHR; DS:=LIT"←";                              05959600 T  0173:2
            DI:=DI-9; DS:=7 FILL;                                           05959800 T  0174:2
      END;                                                                  05960000 T  0175:0
                                                                                        05959400
      GO TO EXIT;                                                           05960200 T  0175:1
    END;                                                                    05960400 T  0177:0
                                                                                        05959200
    IF WAIT10([FID]INX@100000000,@64,18+FID.[5:1]).[42:1] THEN GO TO V;     05960600 T  0177:0
    IF (R:=FID.[12:6]) GEQ 2 THEN % CHECK FOR 40 MIL ADDRESS                05960650 T  0181:0
        IF NOT WAIT10([FID]INX @140000000,@64,18+FID.[5:1]).[43:1]          05960660 T  0182:3
              THEN GO TO V ELSE IF R GEQ 4 THEN GO TO V;% INV ADD           05960670 T  0186:2
    END;                                                                    05960675 T  0188:1
                                                                                        05957750
    IF FILTOG THEN GO XDFILE;                                               05960680 T  0188:1
    IF A=0 THEN GO EXIT;                                                    05960685 T  0189:1
    SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                     05960700 T  0190:2
                                                                                        05960700
 $ SET OMIT = NOT(SHAREDISK)                                                05960705 T  0195:2
    J←J+1;                                                                  05960800 T  0195:2
BZ: D:=(I:=(E:=U[J]).STARTWRD) MOD 30;                                      05961000 T  0196:3
 $ SET OMIT = NOT(SHAREDISK)                                                05961005 T  0199:3
 $ SET OMIT = SHAREDISK                                                     05961199 T  0199:3
    AVS:=30-(S:=(C:=E AND NUMENTM)+D)MOD 30+S;                              05961200 T  0199:3
    FIXARRAY(UT,R,AVS); DISKWAIT(-R,AVS,B:=I DIV 30+USERDISKBOTTOM);        05961400 T  0204:0
    K:=S; I:=D; S:=I+C;                                                     05961600 T  0211:1
```

```
 $ POP OMIT
    G:=1-(NT2:=(P(U[J-1],DUP) AND NUMENT[M])+P(XCH),STARTWRD);                    05961601 T  0214:0
    S:=U[J+1],STARTWRD-S; H:=K:=K-1; IF UT[T:=L],DEND GTR A THEN GO X;            05961800 T  0214:0
W:  IF UT[T+(H+L+1) DIV 2],DEND > A THEN IF UT[H+T-1],DEND > A THEN GO W          05962000 T  0218:1
    ELSE ELSE IF UT[T+T+1],DEND ≤ A THEN BEGIN L+T+1; GO W END;                   05962200 T  0225:0
                                                                                  05962400 T  0231:2
                                                                                              05962400
X:  IF A GEQ L:=(H:=UT[T],DEND)-(Q:=UT[T],DSIZE) THEN                             05962600 T  0239:3
    IF (LA:=(A+N)) LEQ H THEN GO AZ%AREA AVAILABLE                                05962700 T  0244:0
    ELSE IF LA LEQ SA1:=(UT[T+1],DEND-UT[T+1],DSIZE) THEN                         05962800 T  0246:1
    N:=LA-A:=H ELSE N:=SA1-A:=H ELSE IF (LA:=A+N) GTR L THEN                      05962900 T  0251:0
    N:=L-A ELSE RDT:=RDT OR @100000;                                              05963000 T  0257:3
    GO INUSE;                                                                     05963100 T  0261:1
Y:  TMID:=IF RDT THEN "DKTEST " ELSE "BADISK ";                                   05963800 T  0263:0
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)
    STREAM(TMID,FID,N,MID,B,BUFF);                                                05964000 T  0265:1
    BEGIN DS:=LIT ","; SI:=LOC TMID; SI:=SI+1; DS:=7 CHR;                         05964200 T  0267:1
          DS:=LIT "/"; SI:=SI+1; DS:=7 CHR;                                       05964400 T  0268:2
          DS:=13 LIT " NOT CREATED("; SI:=SI+8; SKIP SB;                          05964500 T  0269:2
          IF SB THEN ELSE                                                         05964600 T  0272:0
          BEGIN SI:=LOC N; DS:=7 DEC; N:=DI; DI:=DI-7; DS:=7 FILL;                05964800 T  0272:3
                DI:=N; DS:=5 LIT " SEGS"; SI:=SI+1;                               05964900 T  0274:0
          END; DS:=11 LIT " IN USE BY "; DS:=7 CHR; DS:=LIT"/";                   05965000 T  0275:2
                                                                                              05964800
          SI:=SI+1; DS:=7 CHR;                                                    05965200 T  0278:0
          DS:=2 LIT")+";                                                          05965400 T  0278:2
    END;                                                                          05965600 T  0279:0
                                                                                              05964200
    FORGETSPACE(R);                                                               05966100 T  0279:1
    GO EXIT;                                                                      05966110 T  0280:0
INUSE:          % SEARCH THE DIRECTORY TO FIND THE NAME OF THE CONFLICTING         05966200 T  0283:0
                % FILE.  SINCE USERDISK REMAINS LOCKED, DISK ALLOCATION            05966210 T  0283:0
                % CANNOT CHANGE.  HENCE, THE DIRECTORY NEED NOT BE LOCKED.        05966220 T  0283:0
    FORGETSPACE(R);                                                               05966400 T  0283:0
    FIXARRAY(UT,R,480);                                                           05966600 T  0283:3
    FOR J:=DIRECTORYTOP+4 STEP 16 WHILE TRUE DO                                   05967000 T  0288:0
    BEGIN DISKWAIT(-R,480,J);                                                     05967200 T  0292:0
          FOR I:=14 STEP -1 UNTIL 0 DO                                            05967400 T  0293:2
          BEGIN E:=UT[450+2×I];                                                   05967600 T  0295:0
                IF(E EQV @114)=NOT 0 THEN                                         05967800 T  0297:0
                BEGIN MID:="SYSTEM "; B:=FID; GO Z; END;                          05967900 T  0298:2
                                                                                              05967900
                IF (E EQV @14) NEQ NOT 0 THEN                                     05968000 T  0302:0
                BEGIN B:=UT[30×I+9] AND 31;                                       05968200 T  0303:2
                      FOR K:=1 STEP 1 UNTIL B DO                                  05968400 T  0306:2
                            IF (C:=UT[30×I+9+K])NEQ 0 THEN                        05968600 T  0308:0
                            IF A GEQ C THEN IF A LSS                              05968800 T  0311:0
                            SA1:=(C+D:=UT[30×I+8]) THEN                           05968900 T  0313:0
                            BEGIN MID:=E&((LA LEQ SA1) AND                        05969000 T  0316:1
                                  (RDT,[18:15]))[1:47:1];                         05969100 T  0317:3
                                  IF A+N GTR SA1 THEN N+SA1-A;                    05969150 T  0320:0
                                  B:=UT[451+2×I];                                 05969200 T  0323:0
                                  GO TO Z;                                        05969400 T  0325:0
                            END;                                                  05969600 T  0325:2
                                                                                              05969000
                END;                                                              05969800 T  0327:3
                                                                                              05968200
          END;                                                                    05970000 T  0327:3
                                                                                              05967600
```

```
    END;

Z:
 $ SET OMIT = NOT SHAREDISK
    UNLOCKTOG(USERDISKMASK);

    GO TO Y;
AZ: IF A NEQ L AND LA NEQ H THEN
    BEGIN IF S=0 THEN
 $ SET OMIT = NOT(SHAREDISK)
 $ SET OMIT = SHAREDISK
          BEGIN IF G=0 OR D=0 THEN
               BEGIN USERDISKSPECIALCASE(2,E,UT,J); GO TO BZ END;

               S:=IF P((G+1) DIV 2,DUP) > D THEN P(DEL,D) ELSE P;
               U[J].STARTWRD:=T-S; G:=D-S; K:=G+C-1;
 $ POP OMIT
               MOVE(C,[UT[D]],[UT[G]]); T:=T-S;
          END;

          FOR G:=K STEP -1 UNTIL T DO UT[G+1]:=UT[G];
          UT[T]:=A&(A-L)[TODSIZE];
          UT[T+1]:=H&(H-LA)[TODSIZE];
          C:=C+1;
          K := K+1;
    END ELSE

    IF A=L AND LA=H THEN
    BEGIN C:=C-1; MOVE(K-T,[UT[T+1]],[UT[T]]); K:=K-1 END

    ELSE UT[T]:=(IF A=L THEN H ELSE A)&(Q-N)[TODSIZE];
    U[J].NUMENT:=C;
    IF Q=U[J].MAXSIZ THEN
    BEGIN Q:=UT[H:=K-C+1].DSIZE;
          FOR H:=H STEP 1 UNTIL K DO
               IF P(UT[H].DSIZE,DUP) GTR Q THEN Q:=P ELSE P(DEL);
          U[J].MAXSIZ:=Q;
    END;

    MID:=IF RDT THEN "DKTEST " ELSE "BADISK ";
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)
 $ SET OMIT = NOT(SHAREDISK)
 $ SET OMIT = SHAREDISK
    DISKWAIT(R,AVS,B);
 $ POP OMIT
    UNLOCKTOG(USERDISKMASK);

    FORGETSPACE(R);
CZ: ENTERFILE;
    GO EXIT;
XDFILE:
    IF (HEADER:=DIRECTORYSEARCH(TMID,NFLAG(-TFID OR M),4)) LSS 64 THEN
    BEGIN
          TYPE:=HEADER;
          GO MSG;
    END;
```

```
05970200 T  0330:0
                    05967200
05970300 T  0330:2
05970390 T  0330:2
05970500 T  0330:2
                    05970500
05970600 T  0334:0
05970800 T  0334:2
05971000 T  0336:1
05971005 T  0337:2
05971095 T  0337:2
05971200 T  0337:2
05971400 T  0339:3
                    05971400
05971600 T  0342:2
05971800 T  0346:2
05971801 T  0352:2
05972000 T  0352:2
05972200 T  0355:3
                    05971200
05972400 T  0355:3
05972600 T  0361:1
05972800 T  0364:0
05973000 T  0367:1
05973100 T  0368:2
05973200 T  0369:3
                    05971000
05973400 T  0369:3
05973600 T  0372:0
                    05973600
05973800 T  0378:0
05974000 T  0383:1
05974200 T  0385:3
05974400 T  0387:1
05974600 T  0390:3
05974800 T  0392:0
05975000 T  0397:3
05975200 T  0400:1
                    05974400
05975400 T  0400:1
05975404 T  0402:2
05975410 T  0402:2
05975595 T  0402:2
05975600 T  0402:2
05975601 T  0403:3
05975610 T  0403:3
                    05975610
05975620 T  0407:1
05975630 T  0408:0
05975640 T  0409:0
05975700 T  0412:0
05975750 T  0412:0
05975800 T  0415:1
05975850 T  0415:3
05975900 T  0416:2
05975950 T  0417:0
                    05975800
```

```
    HA←HEADER.[FF];
    HDR←[M[HEADER←HEADER INX 0]] & 30[8:38:10];
    MID←"RADISK ";
    S←HDR[8]; % SEGMENTS PER ROW
    IF A≠0 THEN
    BEGIN
         FOR I←HDR[9] STEP -1 UNTIL 1 DO
         IF (LA←HDR[I+9])≠0 THEN
         IF A GEQ LA AND A LSS LA+S THEN % FOUND ROW
         IF A+N LEQ LA+S THEN GO FOUND ELSE GO CONFLICT;
         TYPE←4;
         IF FALSE THEN
         BEGIN
CONFLICT:     TYPE←3;
              SEGS←A+N-LA-S;
         END;

         HEADERUNLOCK(TMID,TFID,HEADER&HA[CTF]);
         GO MSG;
FOUND:
         HDR[I+9]←0;
         DISKWAIT(HEADER,30,HA);
         IF (I←A-LA) GTR 0 THEN FORGETUSERDISK(LA,I);
         IF (I←LA+S-(LA←A+N)) GTR 0 THEN FORGETUSERDISK(LA,I);
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)
         ENTERFILE;
         GO FINIS;
    END;

    N←S; SEGS←0;
    FOR I←HDR[9] STEP -1 UNTIL 1 DO
    IF (A←HDR[I+9])≠0 THEN
    BEGIN
         HDR[I+9]←0;
         DISKWAIT(HEADER,30,HA);
         WORD←A; FID←DECWORD;
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)
         ENTERFILE;
         SEGS←SEGS+N;
    END;

FINIS:
    FORGETSPACE(HEADER);
    P(DIRECTORYSEARCH(-TMID,TFID,6),DEL);
    TYPE←5;
MSG:
    STREAM(TMID,TFID,SEGS,A,TYPE,BUFF);
    BEGIN
         SI←LOC SEGS; DI←LOC SEGS; DS←8DEC; DS←8DEC;
         DI←LOC SEGS; DS←8FILL; DI←LOC A; DS←8 FILL; DI←BUFF;
         DS←LIT","; SI←LOC TMID; SI←SI+1; DS←7CHR;
         DS←LIT"/"; SI←SI+1; DS←7CHR;
         DS←11 LIT" NOT XD=ED(";
         CI←CI+TYPE;
         GO T0; GO T1; GO T2; GO T3; GO T4; GO T5;
T0:      DS←11 LIT"NOT ON DISK"; GO EXT;
T3:      DS←8 CHR; DS←6 LIT" SEGS ";
```

```
05976000 T  0417:0
05976050 T  0418:1
05976100 T  0421:2
05976150 T  0422:2
05976200 T  0423:2
05976250 T  0424:1
05976300 T  0424:3
05976350 T  0428:3
05976400 T  0430:3
05976450 T  0433:2
05976500 T  0439:0
05976550 T  0439:3
05976600 T  0440:0
05976650 T  0440:2
05976700 T  0441:1
05976750 T  0443:2
                    05976600
05976800 T  0443:2
05976850 T  0445:3
05976900 T  0446:1
05976950 T  0446:1
05977000 T  0448:0
05977050 T  0449:1
05977100 T  0452:2
05977124 T  0457:1
05977150 T  0457:1
05977200 T  0458:0
05977250 T  0458:2
                    05976250
05977300 T  0458:2
05977350 T  0460:0
05977400 T  0464:0
05977450 T  0466:0
05977500 T  0466:2
05977550 T  0468:1
05977600 T  0469:2
05977624 T  0471:2
05977650 T  0471:2
05977700 T  0473:0
05977750 T  0474:1
                    05977450
05977800 T  0474:3
05977850 T  0474:3
05977900 T  0475:2
05977950 T  0477:1
05978000 T  0478:0
05978050 T  0478:0
05978100 T  0480:0
05978150 T  0480:0
05978200 T  0481:0
05978250 T  0482:1
05978300 T  0483:2
05978350 T  0484:2
05978400 T  0486:1
05978450 T  0486:3
05978500 T  0488:1
05978550 T  0490:1
```

```
T1:       DS←6 LIT"IN USE"; GO EXT;                                                  05978600 T  0491:2
T2:       DS←11 LIT"SYSTEM FILE"; GO EXT;                                            05978650 T  0492:3
T4:       SI←SI+8; DS←8 CHR;                                                         05978700 T  0494:3
          DS←12 LIT" NOT IN FILE"; GO EXT;                                           05978750 T  0495:1
T5:       DI←DI"11;                                                                  05978800 T  0497:1
          DS←6 LIT" SEGS="; DS←8 CHR; DS←7 LIT" XD-ED←";                             05978850 T  0497:2
          TYPE←DI; DI←BUFF; DS←LIT" "; DI←TYPE; GO EXT;                              05978900 T  0500:0
EXT:      DS←2 LIT")←";                                                              05978950 T  0501:2
    END STREAM;                                                                      05979000 T  0502:0
                                                                                                      05978100
    A←1; N←SEGS; % FOR LOGGING                                                       05979050 T  0502:1
    GO EXIT;                                                                         05979100 T  0503:3
EXIT:                                                                                05979310 T  0504:1
    IF A≠0 THEN                                                                      05979320 T  0504:1
    BEGIN                                                                            05979330 T  0505:3
          B←BUFF;                                                                    05979340 T  0506:1
          MLOGIT;                                                                    05979350 T  0507:0
    END;                                                                             05979360 T  0508:0
                                                                                                      05979330
      IF RDT THEN M[SLEEPER INX 0] :=1 ELSE SPOUT(BUFF);                             05979400 T  0508:0
    BUFF:=0; IF MSCW NEQ 1 THEN KILL([MSCW]); % CALLED AS IND. RUNNER                05979500 T  0512:2
END;                                                                                 05979600 T  0515:1
                                                                                                      05950200
                                                                                                SIZE= 0516 WORDS
```

```
                    SAVE PROCEDURE DISKIO(LOCIOD,CORE,SIZE,DISK);%                                  06000000 T  0000:0
                                                                                 START OF SAVE SEGMENT; BASE ADDRESS = 00597
                        VALUE CORE,SIZE,DISK;%                                                      06001000 T  0000:0
                        REAL LOCIOD;%                                                               06002000 T  0000:0
                        INTEGER CORE,SIZE,DISK;%                                                    06003000 T  0000:0
                        BEGIN REAL IOD, OLAYIO, FIN;                                                06004000 T  0000:0
STACK(F+1) = IOD
STACK(F+2) = OLAYIO
STACK(F+3) = FIN
                        OLAYIO := SIZE.[3:1]; SIZE.[3:1] := 0;                                      06004010 T  0000:0
                            CORE:=CORE; SIZE:=SIZE; DISK:=DISK; % INTEGERIZE     %645-             06004100 C  0003:3
                            IF DISK.[1:1] THEN                                                      06005000 T  0006:0
                            BEGIN % AUXILIARY MEMORY                                                06006000 T  0006:3
                    $ SET OMIT = NOT(AUXMEM)                                                        06006999 T  0007:1
                    $ SET OMIT = AUXMEM                                                             06009200 T  0007:1
                            PUNT(INVLDAUXIO);                                                       06009300 T  0007:1
                    $ POP OMIT                                                                      06009400 T  0008:0
                            END                                                                     06009500 T  0008:0
                                                                                                                06006000
                            ELSE BEGIN IOD := ABS(CORE) & SIZE[8:38:10]                             06010000 T  0008:0
                                          & ((SIZE INX 29) DIV 30 +@1000)[CTF]                      06011000 T  0009:1
                                          & CORE[24:1:1] & 3[5:46:2];                               06012000 T  0011:3
                    $ SET OMIT = NOT(SHAREDISK)                                                     06012499 T  0014:2
                                STREAM(DISK,D:=CORE.[CF]);                                          06013000 T  0014:2
                                    BEGIN SI ← LOC DISK; DS ← 8 DEC END;%                           06014000 T  0016:0
                                                                                                                06014000
                                    SIZE ← 2;%                                                      06015000 T  0016:3
                                END;%                                                               06016000 T  0017:2
                                                                                                                06010000
                        FIN:=IF OLAYIO THEN IOD&DISK[CTC]&DISK[8:21:12] ELSE IOD;                   06016100 T  0017:2
                        % ACTUAL DISK ADDRESS IN FINALQUE FOR OLAY I/O-S                            06016200 T  0021:1
                        IOREQUEST(NABS(FIN)&@377[25:40:8],IOD,[LOCIOD]&%                            06017000 T  0021:1
                            (SIZE+16)[12:42:6]&OLAYIO[9:47:1]);                                     06018000 T  0023:2
                        LOCIOD ← 0;%                                                                06019000 T  0026:1
                    END DISKIO;%                                                                    06020000 T  0027:1
                                                                                                                06004000
                                                                                                  SIZE= 0028 WORDS
```

```
                    PROCEDURE FORGETESPDISK(SEGMENT); VALUE SEGMENT; REAL SEGMENT; FORWARD;          06020500 T  000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00142
                     REAL PROCEDURE GETESPDISK;%                                                     06021000 T  000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00142
                          BEGIN REAL T=NT1;                                                          06022000 T  000:0
PRT(160) = T
                               IF ESPCOUNT=0 THEN                                                    06022100 T  000:0
                               BEGIN                                                                 06022200 T  000:0
                                    STREAM(D:=T:=SPACE(2));                                          06022300 T  000:2
                                         DS←12 LIT " NO ESPDISK←";                                   06022400 T  000:1
                                    SPOUT(T);                                                        06022500 T  000:1
                                    SLEEP([ESPCOUNT],NOT 0);                                         06022600 T  000:2
                               END;                                                                  06022700 T  000:1
                                                                                                                 06022200
                               STREAM(T←0;A←ESPTAB:X←0);                                             06023000 T  000:1
                               BEGIN SI←A;                                                           06024000 T  001:3
                               L1:  IF SC="" THEN BEGIN SI←SI+1; GO TO L1 END;                       06025000 T  001:0
                                                                                                                 06025000
                                    A←SI; DI←A;                                                      06026000 T  001:0
                               L2:  IF SB THEN                                                       06027000 T  001:2
                                    BEGIN TALLY←TALLY+1; SKIP SB; SKIP DB; GO TO L2 END;            06028000 T  001:0
                                                                                                                 06028000
                                    T←TALLY; DS←SET;                                                 06029000 T  001:0
                               END;                                                                  06030000 T  001:2
                                                                                                                 06024000
                               GETESPDISK←((P(DUP),[CF]=ESPTAB)×8                                    06031000 T  001:3
                               +P(XCH),[30:3])×6+P+ESPDISKBOTTOM;                                    06032000 T  001:0
                               ESPCOUNT←ESPCOUNT-1;                                                  06033000 T  001:1
                          END;                                                                       06033100 T  002:2
                                                                                                                 06022000
                                                                                                    SIZE= 0021 WORDS
```

```
                    PROCEDURE FORGETESPDISK(SEGMENT); VALUE SEGMENT; REAL SEGMENT;%                    06036000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00143
                        BEGIN REAL S,T;                                                               06037000 T  0000:0
STACK(F+1) = S
STACK(F+2) = T

                            IF SEGMENT LSS FSPDISKBOTTOM OR                                           06037100 T  0000:0
                                 SEGMENT GTR ESPDISKTOP THEN                                          06037200 T  0001:1
                                 BYBY("ESPDISK ERROR←",14);                                           06037300 T  0002:1
                                                                                                                  06037300
                                                                                                                  06037300
                            T:=(S:=(T:=SEGMENT-ESPDISKBOTTOM) DIV 6)×6-T;                             06037700 T  0008:2
                            S←S,[30:15]&S[30:45:3]+ESPTAB;                                            06038000 T  0012:1
                            STREAM(T,S); BEGIN SKIP T DB; DS←RESET END;                               06038100 T  0015:0
                                                                                                                  06038100
                            ESPCOUNT←ESPCOUNT+1;                                                      06038200 T  0017:0
                        END;%                                                                         06039000 T  0018:1
                                                                                                                  06037000
                                                                                                    SIZE= 0019 WORDS
```

```
                $ SET OMIT = NOT(DEBUGGING)                                                    06045999 T  000010
               REAL SCHEDULEIDS; % A BIT IN POSITION X MEANS THAT THERE IS A JOB IN THE        06056099 T  000010
PRT(545) = SCHEDULEIDS
                                 % SCHEDULE(SHEET) WITH SCHEDULE-ID X.  USED BY COM5,        06056100 T  000010
                                 % SELECTRUN AND CCFINISH.                                   06056200 T  000010
                $ SET OMIT = NOT(SHAREDISK)                                                    06057000 T  000010
                SAVE PROCEDURE DISKWAIT(CORE,SIZE,DISK);                                       06061500 T  000010
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00625
                        VALUE CORE,SIZE,DISK;                                                  06062000 T  000010
                        REAL CORE,SIZE,DISK;                                                   06063000 T  000010
                        BEGIN REAL T;                                                          06064000 T  000010
STACK(F+1) = T
                             DISKIO(T,(ABS(CORE)-1)&CORE[1:1:1],SIZE,DISK);                    06065000 T  000010
                             SLEEP([T],IOMASK);                                                06066000 T  000312
                        END;                                                                   06067000 T  000510
                                                                                                          06064000
                                                                                                SIZE= 0006 WORDS
```

```
                PROCEDURE DISKSQUASH(BUFF);                                                    06068000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00144
PRT(546) = DISKSQUASH
                VALUE BUFF; REAL BUFF;                                                         06068100 T  0000:0
                BEGIN                                                                          06068200 T  0000:0
                REAL RCW=+0, B=+1, E=B+1, F=E+1, R=F+1, HI=R+1, LO=HI+1,                       06068300 T  0000:0
STACK(F+0) = RCW
STACK(F+1) = B
STACK(F+2) = E
STACK(F+3) = F
STACK(F+4) = R
STACK(F+5) = HI
STACK(F+6) = LO
                    MSCW=-2,                                                                   06068350 T  0000:0
STACK(F-2) = MSCW
                    CNT=LO+1, USE=CNT+1, TOG=USE+1, IOD=TOG+1;                                 06068400 T  0000:0
STACK(F+7) = CNT
STACK(F+10) = USE
STACK(F+11) = TOG
STACK(F+12) = IOD
                REAL T=IOD+1, SUM=T;                                                           06068500 T  0000:0
STACK(F+13) = T
STACK(F+13) = SUM
                REAL A1=T+1, A2=A1+1, A3=A2+1, A4=A3+1, A5=A4+1; % ARRAY VARIABLES             06068600 T  0000:0
STACK(F+14) = A1
STACK(F+15) = A2
STACK(F+16) = A3
STACK(F+17) = A4
STACK(F+20) = A5
                REAL X1=A5+1, X2=X1+1, X3=X2+1, X4=X3+1, X5=X4+1; % SCRATCH VARIABLES          06068700 T  0000:0
STACK(F+21) = X1
STACK(F+22) = X2
STACK(F+23) = X3
STACK(F+24) = X4
STACK(F+25) = X5
                  REAL LOCIOD=X4, HICNT=X4, LSTCNT=X5;                                         06068800 T  0000:0
STACK(F+24) = LOCIOD
STACK(F+24) = HICNT
STACK(F+25) = LSTCNT
                  BOOLEAN CONFLICT=X5+1, PASSTWO=CONFLICT+1, EUNOTSQUASHED=PASSTWO+1,          06068900 T  0000:0
STACK(F+26) = CONFLICT
STACK(F+27) = PASSTWO
STACK(F+30) = EUNOTSQUASHED
                      FILEOK=EUNOTSQUASHED+1, SQALL=FILEOK+1;                                  06069000 T  0000:0
STACK(F+31) = FILEOK
STACK(F+32) = SQALL
                    INTEGER C=SQALL+1, D=C+1, I=D+1, S=I+1, EU=S+1, AV=EU+1,                   06069100 T  0000:0
STACK(F+33) = C
STACK(F+34) = D
STACK(F+35) = I
STACK(F+36) = S
STACK(F+37) = EU
STACK(F+40) = AV
                      AVSIZE=AV+1, DISKAV=AVSIZE+1, SQSIZE=DISKAV+1;                           06069200 T  0000:0
STACK(F+41) = AVSIZE
STACK(F+42) = DISKAV
STACK(F+43) = SQSIZE
```

```
                ARRAY UT=SQSIZE+1[*], MV=UT+1[*], DIR=MV+1[*], EUS=DIR+1[*];                    06069300 T  0000:0
STACK(F+44) = UT
STACK(F+45) = MV
STACK(F+46) = DIR
STACK(F+47) = EUS
                REAL PRTADDR=EUS+1, PRTVALUE=PRTADDR+1;                                         06069400 T  0000:0
STACK(F+50) = PRTADDR
STACK(F+51) = PRTVALUE
                $ SET OMIT = NOT SHAREDISK                                                      06069500 T  0000:0
                LABEL SCAN,SPOUTERR,CK,OKINUSF,NOTOK,OKBOUNDS,MVEMORE,MVE,                      06069900 T  0000:0
                      ENDMVE,AGAIN,OK,NEXT,SQIT,STOPSQ,STOPIT,SDXIT,OUT,FIXMV;                  06070000 T  0000:0
                DEFINE                                                                          06070100 T  0000:0
                 $ SET OMIT = SHAREDISK                                                         06070200 T  0000:0
                       U          = AVTABLE#,                                                   06070300 T  0000:0
                 $ POP OMIT                                                                     06070400 T  0000:0
                       LINK       = [12:10]#,                                                   06070500 T  0000:0
                       ASIZE      = [3:19]#,                                                    06070600 T  0000:0
                       LOCKED     = [2:1]#,                                                     06070700 T  0000:0
                       FACTOR     = 10000#,                                                     06070800 T  0000:0
                       MINSIZE    = 10#,                                                        06070900 T  0000:0
                       MAXMVSIZE  = 900#,                                                       06071000 T  0000:0
                       KEYINMASK  = [18:15]#;                                                   06071100 T  0000:0
                COMMENT                                                                         06071200 T  0000:0
                       FACTOR:    THE MAXIMUM SEPARATION, IN SEGMENTS, ALLOWED                  06071300 T  0000:0
                                  BETWEEN TWO AVAILABLE AREAS WHICH ARE TO BE                   06071400 T  0000:0
                                  SQUASHED. IN GENERAL, FACTOR SHOULD NOT BE MADE               06071500 T  0000:0
                                  LARGER THAN THE CAPACITY OF A 20 ML SUBMOD,I.E.,              06071600 T  0000:0
                                  10,000 SEGMENTS,                                              06071700 T  0000:0
                       MINSIZE:   THE MINIMUM SIZE, IN SEGMENTS, ALLOWED FOR AN                 06071800 T  0000:0
                                  AVAILABLE AREA TO BE CONSIDERED AS A CANDITATE                06071900 T  0000:0
                                  FOR SQUASHING. MINSIZE MAY BE MADE AS SMALL AS                06072000 T  0000:0
                                  ONE, BUT AS SQUASH TIME VARIES INVERSLY WITH                  06072100 T  0000:0
                                  MINSIZE, SMALLER VALUES WILL INCREASE SQUASH-                 06072200 T  0000:0
                                  ING TIME PROPORTIONALLY. MINSIZE LIMITA-                      06072300 T  0000:0
                                  TIONS MAY BE OVERRIDEN BY THE LOOKAHEAD                       06072400 T  0000:0
                                  FACILITY.                                                     06072500 T  0000:0
                       MAXMVSIZE: LIMITS THE NUMBER OF INDIVIDUAL AREAS IN AN                   06072600 T  0000:0
                                  IN-USE AREA TO BE AT MOST MAXMVSIZE/3 AREAS                   06072700 T  0000:0
                                  FOR SQUASHING TO OCCUR.                                       06072800 T  0000:0
                                  NOTE:                                                         06072900 T  0000:0
                                    1) MAXMVSIZE MUST BE LESS THAN 1024.                        06073000 T  0000:0
                                    2) MAXMVSIZE MUST BE A MULTIPLE OF 3.       ;               06073100 T  0000:0
DEFINE CELL      = M[PRTADDR]#,                                                                 06073200 T  0000:0
       STOP      = M[PRTADDR]#,                                                                 06073300 T  0000:0
       STOPCK    = IF M[PRTADDR] THEN GO STOPSQ#,                                               06073400 T  0000:0
       MOVEABLE  = NOT DIR[X3+4].[42:1]#,                                                       06073500 T  0000:0
       TEMPDSK   = MV[I+2],[1:1]#;                                                              06073600 T  0000:0
SUBROUTINE SQUASHMESS;                                                                          06073700 T  0000:0
BEGIN                                                                                           06073800 T  0001:0
     IF (X1:=P(XCH))>1 THEN X3:=IF SQSIZE#0 THEN SQSIZE                                         06073900 T  0001:0
     ELSF EUS[EU-1].DSIZE;                                                                      06074000 T  0004:0
     STREAM(A:=EU-1,B:=X1,C:=X3,C1:=0,C2:=0,CX:=0,                                              06074100 T  0006:3
            NOSQ:=EUNOTSQUASHED, X2:=X2:=SPACE(10));                                            06074200 T  0009:0
     BEGIN                                                                                      06074300 T  0011:3
          C1:=C1; GO TO LO;                                                                     06074400 T  0011:3
          S1:=LOC A; DS:=4 LIT" EU "; DS:=2 DEC;                                                06074500 T  0012:1
          A:=DI; DI:=DI-2; DS:=FILL; DI:=A; C1:=CX;                                             06074600 T  0013:2
```

```
     L0:  C2:=CI; GO TO L2; DS:=4 LIT"NULL"; CI:=CX;                    06074700 T  0014:3
     L1:  DS:=7 LIT" SQUASH"; CI:=CX;                                   06074800 T  0016:1
     L2:  CI:=CI+8;                                                     06074900 T  0017:3
          GO TO LL0; GO TO LL0; GO TO LL2; GO TO LL2;                   06075000 T  0018:1
     LL0: CX:=CI; CI:=C1;                                               06075100 T  0019:1
          B(NOSQ(DS:=LIT" "; CX:=CI; CI:=C2));                          06075200 T  0019:3
          CX:=CI; GO TO L1;                                             06075300 T  0022:1
          B(NOSQ(JUMP OUT 2 TO LL1); DS:=2 LIT"ED";                     06075400 T  0022:3
            JUMP OUT TO LL1);                                           06075500 T  0025:1
          DS:=3 LIT"ING";                                               06075600 T  0026:0
     LL1: GO TO EXT;                                                    06075700 T  0026:3
     LL2: DS:=LIT" "; CX:=CI; CI:=C2;                                   06075800 T  0027:0
          CX:=CI; GO TO L1;                                             06075900 T  0028:0
          SI:=B; 2(SI:=SI-8); B:=SI;                                    06076000 T  0028:2
          B(CX:=CI; CI:=C1);                                            06076100 T  0029:3
          DS:=2 LIT" ("; SI:=LOC C;                                     06076200 T  0031:0
          DS:=6 DEC; C:=DI; DI:=DI-6; DS:=5 FILL; DI:=C;                06076300 T  0031:3
          DS:=19 LIT" SEGMENTS AVAILABLE";                              06076400 T  0033:0
          B(JUMP OUT TO LL3); DS:=4 LIT" ON ";                          06076500 T  0035:3
          CX:=CI; CI:=C1;                                               06076600 T  0037:3
     LL3: DS:=LIT")";                                                   06076700 T  0038:1
     EXT: DS:=LIT"←";                                                   06076800 T  0038:3
     END;                                                               06076900 T  0039:1
                                                                                      06074300
     SPOUT(X2);                                                         06077000 T  0039:2
END PRINTING MESSAGES;                                                  06077100 T  0040:3
                                                                                      06073800
SUBROUTINE SCANMESSAGE;                                                 06077200 T  0041:0
BEGIN                                                                   06077300 T  0041:0
     X1:=(X5:=NEUP.[FF])-1; X2:=BUFF.[30:18];                           06077400 T  0041:0
     FIXARRAY(EUS,A5,X5);                                               06077500 T  0044:2
     MOVE(X5,A5-1,A5);                                                  06077600 T  0048:3
     X5:=-1; % WILL BE GEQ ZERO AFTER FIRST PASS THRU SCAN              06077700 T  0050:3
SCAN:                                                                   06077800 T  0051:3
     STREAM(A:=0,SIZ:=0,EU1:=-1,EU2:=-1,ERRTOG:=0:NO:=0,                06077900 T  0051:3
            B:=X5<0,EU:=@2564000000000000,CX:=0,C1:=0,                  06078000 T  0054:1
            C2:=0,KTR:=X2);                                             06078100 T  0055:3
     BEGIN                                                              06078200 T  0056:2
          C1:=CI; GO TO L2;                                             06078300 T  0056:2
          IF SC<0 THEN                                                  06078400 T  0057:0
     A0:  BEGIN TALLY:=1; NO:=TALLY; CI:=CX END;                        06078500 T  0057:2
                                                                                      06078500
          IF SC=12 THEN GO TO A0;                                       06078600 T  0058:1
          DI:=LOC SI7;                                                  06078700 T  0059:0
     L1:  IF SC GEQ 0 THEN IF SC<12 THEN                                06078800 T  0059:1
          BEGIN                                                         06078900 T  0060:1
               TALLY:=TALLY+1;                                          06079000 T  0060:1
               SI:=SI+1;                                                06079100 T  0060:2
               GO TO L1;                                                06079200 T  0060:3
          END;                                                          06079300 T  0061:0
                                                                                      06078900
          NO:=TALLY;                                                    06079400 T  0061:0
          SI:=SI-NO;                                                    06079500 T  0061:1
          DS:=NO OCT;                                                   06079600 T  0061:3
          TALLY:=0; NO:=TALLY;                                          06079700 T  0062:1
          CI:=CX;                                                       06079800 T  0062:3
     L2:  C2:=CI; GO TO STR;                                            06079900 T  0063:0
```

```
      TALLY:=1; DI:=LOC EU;                                                    06080000 T  0063:2
      IF 2 SC=DC THEN % AN EU SPECIFIED                                        06080100 T  0064:0
      BEGIN                                                                    06080200 T  0064:2
           CX:=CI; GO TO L3;                                                   06080300 T  0064:2
           IF SC GEQ 0 THEN IF SC<12 THEN                                      06080400 T  0065:0
           BEGIN                                                               06080500 T  0066:0
                SI:=SI+1; DI:=LOC EU1;                                         06080600 T  0066:0
                IF  SC GEQ 0 THEN IF SC<12 THEN                                06080700 T  0066:2
                TALLY:=2 ELSE GO TO A1;                                        06080800 T  0067:2
                SI:=SI-1; NO:=TALLY;                                           06080900 T  0068:1
                DS:=NO OCT; TALLY:=0;                                          06081000 T  0068:3
           END ELSE GO TO A1;                                                  06081100 T  0069:2
                                                                                          06080500
      END;                                                                     06081200 T  0070:0
                                                                                          06080200
      NO:=TALLY; CI:=A;                                                        06081300 T  0070:0
      CI:=A;                                                                   06081400 T  0070:2
L3:   IF SC=" " THEN BEGIN SI:=SI+1; GO TO L3 END; CI:=CX;                     06081500 T  0070:3
                                                                                          06081500
STR:  SI:=KTR; CI:=CI+B; GO TO L5; GO TO L4;                                   06081600 T  0072:0
L4:   IF SC="←" THEN GO TO EXT;                                                06081700 T  0073:1
      CX:=CI; CI:=C1; % SIZE CHECK                                             06081800 T  0074:0
      NO(JUMP OUT TO L5);                                                      06081900 T  0074:2
      CX:=CI; GO TO L3;                                                        06082000 T  0075:3
      IF SC≠"←" THEN                                                           06082100 T  0076:1
A1:   GO TO ERR;                                                               06082200 T  0076:3
      GO EXT;                                                                  06082300 T  0077:0
L5:   A:=CI; CI:=C2; % EU CHECK                                                06082400 T  0077:1
      NO(JUMP OUT TO ERR);                                                     06082500 T  0077:3
      IF SC="-" THEN                                                           06082600 T  0079:0
           BEGIN                                                               06082700 T  0079:2
                SI:=SI+1; CX:=CI; GO TO L3;                                    06082800 T  0079:2
                CX:=CI; CI:=C1; % SIZE CHECK                                   06082900 T  0080:1
                NO(JUMP OUT TO L6); GO TO L7;                                  06083000 T  0080:3
L6:             TALLY:=EU1; EU2:=TALLY;                                        06083100 T  0082:1
                A:= CI; CI:=C2; % EU CHECK                                     06083200 T  0083:1
                NO(JUMP OUT TO ERR);                                           06083300 T  0083:3
           END;                                                                06083400 T  0085:0
                                                                                          06082700
L7:   A:=TALLY; % ZERO OUT A                                                   06083500 T  0085:0
      IF SC="←" THEN GO TO EXT;                                                06083600 T  0085:1
      IF SC="," THEN                                                           06083700 T  0086:0
      BEGIN SI:=SI+1; A:=SI; GO EXT END;                                       06083800 T  0086:2
                                                                                          06083800
ERR:  TALLY:=1; ERRTOG:=TALLY;                                                 06083900 T  0087:1
EXT:                                                                           06084000 T  0087:3
      END;                                                                     06084100 T  0087:3
                                                                                          06078200
      IF P THEN % ERROR IN INPUT MESSAGE                                       06084200 T  0088:0
      BEGIN                                                                    06084300 T  0088:0
SPOUTERR:                                                                      06084400 T  0088:2
           SPOUT(P(BUFF.[15:15]-1,DUP)&M[P-1][9:9:9]);                         06084500 T  0088:2
           FORGETSPACE(A5);                                                    06084600 T  0093:0
           P(XIT);                                                             06084700 T  0093:3
      END;                                                                     06084800 T  0094:0
                                                                                          06084300
      IF (X3:=P) GEQ 0 THEN % AN EU RANGE SPECIFIED.                           06084900 T  0094:0
```

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      BEGIN                                                                                  06085000 T  0095:0
            IF (X4:=P)>X1 OR X3>X1 THEN GO SPOUTERR;                                         06085100 T  0095:2
            FOR I:=X3 STEP 1 UNTIL X4 DO EUS[I]:=1;                                          06085200 T  0098:1
            P(DEL); GO CK;                                                                   06085300 T  0103:2
      END;                                                                                   06085400 T  0104:1
                                                                                                       06085000
      X5:=P(XCH); % SIZE OF SQUASH                                                           06085500 T  0104:1
      IF (X4:=P) GEQ 0 THEN IF X4>X1 THEN GO SPOUTERR ELSE                                   06085600 T  0105:0
      EUS[X4]:=1&X5[TODSIZE] ELSE IF X5=0 THEN SQALL:=1                                      06085700 T  0107:1
      ELSE SQSIZE:=X5;                                                                       06085800 T  0111:3
CK:   IF (X2:=P)#0 THEN GO SCAN; % NOT FINISHED YET                                          06085900 T  0113:3
END SCANNING INPUT MESSAGE;                                                                  06086000 T  0115:1
                                                                                                       06077300
SUBROUTINE FIXANDWRITEHEADER;                                                                06086100 T  0115:2
BEGIN                                                                                        06086200 T  0116:0
      M[A4+9+X2,[28:5]]:=C;                                                                  06086300 T  0116:0
      DISKWAIT(A4,30,X2,[CF]);                                                               06086400 T  0119:0
END WRITING NEW HEADER;                                                                      06086500 T  0120:3
                                                                                                       06086200
SUBROUTINE BOUNDARYCK;                                                                       06086600 T  0121:0
BEGIN                                                                                        06086700 T  0121:0
      LSTCNT:=0; M[A2-1]:=-1;                                                                06086800 T  0121:0
MVEMORE:                                                                                     06086900 T  0124:0
      X3:=HICNT:=0; STOPCK;                                                                  06087000 T  0124:0
      FOR I:=CNT STEP -3 UNTIL 0 DO                                                          06087100 T  0127:0
      IF P(MV[I],DUP).DEND>X3 AND P(XCH)>0 THEN                                              06087200 T  0128:0
      BEGIN X3:=MV[I].DEND; HICNT:=I END;                                                    06087300 T  0130:3
                                                                                                       06087300
      IF X3=0 THEN % RE-ORDERING OF MV ARRAY COMPLETE                                        06087400 T  0135:3
      BEGIN                                                                                  06087500 T  0136:2
            MV[LSTCNT+2].LINK:=@1777;                                                        06087600 T  0137:0
            GO OKBOUNDS;                                                                     06087700 T  0140:0
      END;                                                                                   06087800 T  0140:2
                                                                                                       06087500
      IF M[A2-1]<0 THEN M[A2-1]:=HICNT ELSE MV[LSTCNT+2].LINK:=HICNT;                        06087900 T  0140:2
      MV[LSTCNT:=HICNT]:=NABS(*P(DUP));                                                      06088000 T  0148:2
      MV[HICNT+1],[2:26]:=HI;                                                                06088100 T  0150:3
      HI:=HI-(X3:=MV[HICNT].DSIZE);                                                          06088200 T  0153:3
      IF X3 LEQ UT[AV+1].ASIZE THEN                                                          06088300 T  0156:1
OK:   BEGIN                                                                                  06088400 T  0158:1
            MV[HICNT+2]:=0;                                                                  06088500 T  0158:3
            GO MVEMORE;                                                                      06088600 T  0160:2
      END ELSE                                                                               06088700 T  0161:0
                                                                                                       06088400
      BEGIN % LOOKING FOR TEMPORARY STORAGE                                                  06088800 T  0161:0
            FOR I:=S-2 STEP -1 UNTIL D DO                                                    06088900 T  0161:2
            IF X3 LEQ UT[I].ASIZE THEN                                                       06089000 T  0165:3
            IF NOT UT[I].LOCKED THEN      % OK FOR TEMP STORAGE                              06089100 T  0167:1
            BEGIN                                                                            06089200 T  0169:0
                  MV[HICNT+2]:=UT[I].DEND&I[2:38:10];                                        06089300 T  0169:2
                  GO MVEMORE;                                                                06089400 T  0173:0
            END;                                                                             06089500 T  0173:2
                                                                                                       06089200
      END;                                                                                   06089600 T  0174:0
                                                                                                       06088800
      IF PASSTWO THEN % NON-PROTECTED FILE TRANSFER                                          06089700 T  0174:0
      BEGIN                                                                                  06089800 T  0174:1
```

```
          DISKWAIT(-A4,30,MV[HICNT+2],[CF]);                                  06089900 T  0174:3
          STREAM(A:=[M[A4+MV[HICNT+2],[FF]]],X2:=X2:=SPACE(6));               06090000 T  0177:2
          BEGIN                                                               06090100 T  0182:3
               DS:=27 LIT" #FILE INTEGRITY CONFLICT: "; SI:=A;                06090200 T  0182:3
               SI:=SI+1; DS:=7 CHR; DS:=LIT"/"; SI:=SI+1;                     06090300 T  0186:3
               DS:=7 CHR; DS:=LIT"+";                                         06090400 T  0188:0
          END;                                                                06090500 T  0188:3
                                                                                           06090100
          SPOUT(X2); CELL.KEYINMASK:=7;                                       06090600 T  0189:0
          SLEEP((PRTADDR INX M),@77777); STOPCK;                              06090700 T  0192:2
          IF CELL=2 THEN BEGIN CELL:=0&1[CTF]; GO TO OK END;                  06090800 T  0196:1
                                                                                           06090800
     END ELSE CONFLICT:=TRUE;                                                 06090900 T  0202:0
                                                                                           06089800
     TOG:=0;                                                                  06091000 T  0203:1
OKBOUNDS:                                                                     06091100 T  0204:0
END BOUNDARY AND CONFLICT CHECKING;                                           06091200 T  0204:0
                                                                                           06086700
BOOLEAN SUBROUTINE INUSEOK;                                                   06091300 T  0204:1
BEGIN                                                                         06091400 T  0205:0
     UT[AV+1],[1:1]:=NOT PASSTWO; TOG:=1; CNT:=0;                             06091500 T  0205:0
     FOR X1:=DIRECTORYTOP+4 STEP 16 WHILE TRUE DO                             06091600 T  0209:3
     BEGIN STOPCK;                                                            06091700 T  0213:3
          DISKWAIT(-A1,480,X1);                                               06091800 T  0215:2
          FOR I:=14 STEP -1 UNTIL 0 DO                                        06091900 T  0217:0
          BEGIN STOPCK;                                                       06092000 T  0218:0
               IF ((E:=DIR[450+P(I,DUP,+)]) EQV @114)=NOT 0 THEN              06092100 T  0219:3
               GO TO NOTOK;                                                   06092200 T  0223:0
               IF (E EQV @14)≠ NOT 0 THEN                                     06092300 T  0223:2
               BEGIN FILEOK:=FALSE; % INITIATE STATUS CHECKING                06092400 T  0225:0
     B:=DIR[(X3:=30×I)+9],[43:5];                                             06092500 T  0226:1
     FOR X2:=1 STEP 1 UNTIL B DO                                              06092600 T  0229:1
     IF (C:=DIR[X3+9+X2])≠0 THEN                                              06092700 T  0230:0
     IF P(C,DUP)<HI AND P(XCH)>LO THEN                                        06092800 T  0232:2
     IF FILEOK THEN GO FIXMV ELSE     % CHECK STATUS                         06092900 T  0235:0
     IF NOT SYSTEMFILE(E,DIR[450+P(I,DUP,+)+1]) AND                           06093000 T  0235:3
         DIR[X3+4],[12:4]=0 THEN      % NOT SYSTEM FILE                      06093100 T  0239:2
     IF (P(DIR[X3+4],DUP),[1:3] OR P(XCH),[16:20] OR                          06093200 T  0241:3
         DIR[X3+9],[1:28])=0 THEN     % FILE NOT IN USE                       06093300 T  0245:0
     IF MOVEABLE THEN                 % NOT PERMANENT                        06093400 T  0247:1
     BEGIN                                                                    06093500 T  0249:2
          FILEOK:=TRUE; % ELIMINATE STATUS CHECKING                           06093600 T  0250:0
FIXMV:    USE:=USE-(MV[CNT]:=C&DIR[X3+8][TODSIZE])                            06093700 T  0250:3
                                 ,DSIZE;                                      06093800 T  0252:3
          MV[CNT+1]:=(X1+I)&X2[CTF]; % HEADER INFO                            06093900 T  0255:1
          IF PASSTWO THEN % SAVE LOC OF FIDS                                  06094000 T  0258:0
          MV[CNT+2]:=(X1+15)&(I×2)[CTF];                                      06094100 T  0258:1
          IF USE=0 THEN % FOUND ALL USERS OF IN-USE AREA                      06094200 T  0262:0
          BEGIN                                                               06094300 T  0262:3
               BOUNDARYCK;                                                    06094400 T  0263:1
               GO OKINUSE;                                                    06094500 T  0264:0
          END;                                                                06094600 T  0264:2
                                                                                           06094300
          IF USE<0 THEN GO TO NOTOK; % DIRECTORY ERROR                        06094700 T  0264:2
          IF (CNT:=CNT+3) MOD 150 = 0 THEN                                    06094800 T  0265:3
          BEGIN                                                               06094900 T  0268:0
               IF CNT=MAXMVSIZE THEN GO TO NOTOK;                             06095000 T  0268:2
```

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                                        FIXARRAY(MV,X4,(CNT+150));                                  06095100 T  0269:3
                                        MOVE(CNT,A2,X4);                                            06095200 T  0275:0
                                        FORGETSPACE(A2);                                            06095300 T  0276:2
                                        A2:=X4;                                                     06095400 T  0277:1
                                    END;                                                            06095500 T  0278:0
                                                                                                                06094900
                                END ELSE GO TO NEXT ELSE GO TO NEXT;                                06095600 T  0278:0
                                                                                                                06093500
                            END;                                                                    06095700 T  0280:1
                                                                                                                06092400
NEXT:       END;                                                                                    06095800 T  0280:1
                                                                                                                06092000
    END;                                                                                            06095900 T  0282:2
                                                                                                                06091700
NOTOK:                                                                                              06096000 T  0283:0
    TOG:=0;                                                                                         06096100 T  0283:0
OKINUSE:                                                                                            06096200 T  0283:3
    INUSEOK:=TOG;                                                                                   06096300 T  0283:3
END SEARCHING IN USE AREAS;                                                                         06096400 T  0284:1
                                                                                                                06091400
SUBROUTINE MOVEANDFIX;                                                                              06096500 T  0284:2
BEGIN                                                                                               06096600 T  0285:0
    I:=M[A2-1]; STOPCK;                                                                             06096700 T  0285:0
    WHILE I<@1777 DO                                                                                06096800 T  0288:3
    BEGIN                                                                                           06096900 T  0290:0
        DISKWAIT(-A4,30,(X2:=MV[I+1]),[CF]); % READ IN HEADER                                       06097000 T  0290:0
    MVF: X1:=-30; F:=P(MV[I],DUP),DEND+(B:=P(XCH),ASIZE);                                           06097100 T  0293:1
        IF P(MV[I+2],DEND=0,DUP) THEN C:=MV[I+1],[2:26] ELSE                                        06097200 T  0297:2
        MV[I],DEND:=(C:=MV[I+2],DEND)-B;                                                            06097300 T  0302:1
        WHILE (X1:=X1+30)<B DO                                                                      06097400 T  0307:2
        BEGIN                                                                                       06097500 T  0309:3
            E:=IF P((B-X1),DUP)<30 THEN P ELSE P(DEL,30);                                           06098300 T  0309:3
            DISKIO(T,1-A3,E×30,F:=F-E);                                                             06098400 T  0313:1
            IOD:=IOD&(E×30)[8:38:10]&E[27:42:6];                                                    06098500 T  0316:3
            LOCIOD:=0; SLEEP([T],IOMASK);                                                           06098600 T  0320:0
            STREAM(A:=C:=C-E,B:=A3-1);                                                              06098700 T  0322:1
            BEGIN SI:=LOC A; DS:= 8 DEC END;                                                        06098800 T  0324:3
                                                                                                                06098800
            IOREQUEST(NABS(IOD)&@357[25:40:8],IOD,                                                  06098900 T  0325:2
                    [LOCIOD]&18[12:42:6]);                                                          06099000 T  0327:2
            SLEEP([LOCIOD],IOMASK);                                                                 06099100 T  0329:0
            IF LOCIOD.[28:1] THEN % WRITE LOCKOUT OCCURED                                           06099200 T  0330:2
            BEGIN                                                                                   06099300 T  0331:1
                UT[IF P THEN AV+1 ELSE MV[I+2].[2:10]].LOCKFD:=1;                                   06099400 T  0331:3
                UT[AV+1].DEND:=MV[I+1].[2:26]; GO ENDMVE;                                           06099500 T  0337:1
            END;                                                                                    06099600 T  0342:0
                                                                                                                06099300
    END;                                                                                            06099700 T  0342:0
                                                                                                                06097500
    FIXANDWRITEHEADER;                                                                              06099800 T  0342:2
    IF NOT P THEN % TEMPORARY DISK STORAGE WAS USED.                                                06099900 T  0344:0
    BEGIN                                                                                           06100000 T  0344:1
        MV[I+2],DEND:=0;                                                                            06100100 T  0344:3
        TEMPDSK:=1;                                                                                 06100200 T  0347:3
        GO TO MVE;                                                                                  06100300 T  0350:3
    END;                                                                                            06100400 T  0351:1
                                                                                                                06100000
```

```
                I:=MV[I+2].LINK;                                                    06100500 T  0351:1
          END;                                                                      06100600 T  0353:1
                                                                                                06096900
     %    WILL NOW RECONFIGURE THE AVAILABLE TABLE                                  06100700 T  0353:3
          UT[AV]:=HI&(UT[AV].ASIZE+UT[AV+1].ASIZE)[2:28:20];                        06100800 T  0353:3
          MOVE(S-AV,P([UT[AV+2]].DUP),NOT 0 INX P(XCH));                            06100900 T  0358:2
          C:=(S:=S-1)-1; FOR I:=C STEP -1 UNTIL D DO                                06101000 T  0362:1
          IF P(UT[I].ASIZE,DUP)>USE THEN USE:=P ELSE P(DEL);                        06101100 T  0366:0
          U[FU]:=P(DUP,LOD,DUP)&USE[1:28:20]&(P(XCH).NUMENT-1)[TONUMENT];           06101200 T  0371:3
          EUNOTSQUASHED:=FALSE;                                                     06101300 T  0376:2
          IF NOT SQALL THEN                                                         06101400 T  0377:1
          BEGIN                                                                     06101500 T  0377:3
               IF P(SQSIZE,DUP)≠0 AND P(XCH) LEQ USE THEN CELL:=1                   06101600 T  0378:1
               ELSE IF P(EUS[EU-1].DSIZE,DUP)≠0 AND P(XCH) LEQ USE                  06101700 T  0381:2
               THEN  ELSE GO TO ENDMVE;                                             06101800 T  0385:1
               P(DEL); GO STOPSQ;                                                   06101900 T  0386:2
          END;                                                                      06102000 T  0387:1
                                                                                                06101500
     ENDMVE:                                                                        06102100 T  0387:1
     END FIXING AND MOVING;                                                         06102200 T  0387:1
                                                                                                06096600
      $ SET OMIT = NOT SHAREDISK                                                    06102220 T  0387:2
          P(0,0,0,0,0,0,0,0,0,0);                                                   06102500 T  0387:2
          P(0,0,0,0,0,0,0,0,0,0);                                                   06102600 T  0390:2
          P(0,0,0,0,0,0,0,0,0,0);                                                   06102700 T  0393:0
          P(0,0,0,0,0,0,0,0,0);                                                     06102800 T  0395:2
          P(.DISKSQUASH,DUP,M[(P)]); % PRTADDR,PRTVALUE                             06102900 T  0397:3
      $ SET OMIT = NOT SHAREDISK                                                    06103000 T  0399:0
          SCANMESSAGE;                                                              06103300 T  0399:0
     $ SET OMIT = SHAREDISK                                                         06103400 T  0400:0
          LOCKDIRECTORY;                                                            06103500 T  0400:0
                                                                                                06103500
                                                                                                06103500
     $ POP OMIT                                                                     06103600 T  0406:2
          SLEEP([TOGLE],USERDISKMASK); LOCKTOG(USERDISKMASK);                       06103700 T  0406:2
                                                                                                06103700
          HALT; % STOP NORMAL STATE PROCESSING WHILE SQUASHING                      06103800 T  0411:2
          A4:=SPACE(30);                                                            06103900 T  0412:0
     $ SET OMIT = NOT SHAREDISK                                                     06104000 T  0414:1
          FIXARRAY(DIR,A1,480); FIXARRAY(MV,A2,150);                                06107200 T  0414:1
          A3:=SPACE(900);                                                           06107300 T  0422:3
          IOD:=@1400001000000000&(A3-1)[CTC];                                       06107400 T  0425:0
          IF NOT SQALL THEN FOR EU:=1 STEP 1 UNTIL NEUP.[FF] DO                     06107900 T  0426:3
          IF (CELL:=(P(SQSIZE,DUP)≠0 AND P(XCH) LEQ U[EU].[1:20]))                  06108000 T  0432:0
          THEN BEGIN P(2); SQUASHMESS; GO STOPIT END;                               06108100 T  0435:2
                                                                                                06108100
          FOR EU:=1 STEP 1 UNTIL NEUP.[FF] DO %                                     06108200 T  0441:2
          IF NOT (E:=U[EU]).EUNP THEN        % NOT A DUMMY EU                       06108300 T  0445:3
          IF EUS[EU-1] OR SQALL OR SQSIZE≠0 THEN % SQUASH THIS EU                   06108400 T  0447:2
          BEGIN                                                                     06108500 T  0450:2
               EUNOTSQUASHED:=TRUE;                                                 06108600 T  0451:0
               IF NOT SQALL THEN % CHECK IF SQUASH IS NECESSARY                     06108700 T  0451:3
               IF (P(EUS[EU-1].DSIZE,DUP) LEQ E.[1:20] AND P(XCH)≠0)                06108800 T  0452:1
               THEN  BEGIN P(3); SQUASHMESS; GO STOPIT END;                         06108900 T  0456:0
                                                                                                06108900
               CELL:=0&1[CTF];                                                      06109000 T  0458:2
               P(0); SQUASHMESS;                                                    06109100 T  0460:2
```

```
          D:=(I:=E.STARTWRD) MOD 30;                                                    06109200 T  0462:0
          AVSIZE:=30-(S:=(E AND NUMENTM)+D) MOD 30+S;                                   06109300 T  0464:1
          FIXARRAY(UT,R,AVSIZE);                                                        06109400 T  0468:0
          DISKAV:=1 DIV 30+USERDISKBOTTOM;                                              06109500 T  0472:1
 $ SET OMIT = NOT SHAREDISK                                                             06109600 T  0474:0
          DISKWAIT(=R,AVSIZE,DISKAV);                                                   06110300 T  0474:0
AGAIN:    SUM:=USE:=0;                                                                  06110400 T  0475:2
          FOR I:=S-3 STEP -1 UNTIL D DO                                                 06110500 T  0476:3
          BEGIN STOPCK;                                                                 06110600 T  0481:0
               IF (UT[I+1]<0)=PASSTWO THEN % NOT CHECKED THIS PASS                      06110700 T  0482:3
               IF ((X1:=UT[I],ASIZE)+(X2:=UT[I+1],ASIZE)) GEQ SUM                       06110800 T  0484:3
               THEN IF (X3:=(((X4:=UT[I+1],DEND)-1)-UT[I+1],ASIZE)-                     06110900 T  0489:0
               X5:=(UT[I],DEND-1)) LEQ FACTOR THEN IF MINSIZE LEQ X2                    06111000 T  0491:1
               THEN IF MINSIZE LEQ X1 THEN                                              06111100 T  0498:1
               BEGIN                                                                    06111200 T  0500:0
SQIT:               USE:=X3; AV:=I;                                                    06111300 T  0500:2
                    SUM:=X1+X2; % SUM OF CURRENT AVAILABLE AREAS                        06111400 T  0502:0
                    HI:=X4; LO:=X5;                                                     06111500 T  0503:1
               END ELSE IF I#0 THEN % LOOK AHEAD TO NEXT AREA                           06111600 T  0504:3
                                                                                                        06111200
               IF ((MINSIZE LEQ UT[I-1],ASIZE) AND (((X5-X1)-                           06111700 T  0507:3
               UT[I-1],DEND-1) LEQ FACTOR)) THEN GO SQIT;                               06111800 T  0511:0
          END;                                                                          06111900 T  0514:3
                                                                                                        06110600
          IF USE#0 THEN % FOUND A POSSIBLE SQUASH SITUATION                             06112000 T  0517:0
          BEGIN                                                                         06112100 T  0517:3
               IF INUSEOK THEN MOVEANDFIX;                                              06112200 T  0518:1
               GO AGAIN;                                                                06112300 T  0521:0
          END ELSE % TIME TO WRAP IT UP FOR THIS EU UNLESS....                          06112400 T  0521:2
                                                                                                        06112100
          IF CONFLICT THEN IF NOT PASSTWO THEN % ..CONFLICTS EXIST                      06112500 T  0521:2
          BEGIN                                                                         06112600 T  0523:1
               PASSTWO:=TRUE;                                                           06112700 T  0523:3
               GO AGAIN;                                                                06112800 T  0524:2
          END ELSE                                                                      06112900 T  0525:0
                                                                                                        06112600
          BEGIN % CLEAN-UP PASS AFTER CONFLICTS RESOLVED.                               06113000 T  0525:0
               PASSTWO:=CONFLICT:=0;                                                    06113100 T  0525:2
               GO AGAIN;                                                                06113200 T  0526:3
          END;                                                                          06113300 T  0527:1
                                                                                                        06113000
STOPSQ:   FOR I:=D STEP 1 UNTIL S DO UT[I]:=ABS(P(DUP,LOD)&0[2:2:1]);                   06113400 T  0527:1
          IF NOT EUNOTSQUASHED THEN                                                     06113500 T  0534:0
 $ SET OMIT = NOT SHAREDISK                                                             06113600 T  0534:2
          DISKWAIT( R,AVSIZE,DISKAV);                                                   06114300 T  0534:2
          FORGETSPACE(R);                                                               06114400 T  0536:1
          P(1); SQUASHMESS;                                                             06114500 T  0537:0
STOPIT:   IF STOP THEN GO OUT; % STOPCK GOT US HERE                                     06114600 T  0538:0
     END EU LOOP;                                                                       06114700 T  0539:3
                                                                                                        06108500
OUT:                                                                                    06114800 T  0540:1
     FORGETSPACE(A1); FORGETSPACE(A2); FORGETSPACE(A3);                                 06114900 T  0540:1
 $ SET OMIT = NOT SHAREDISK                                                             06115000 T  0542:2
SDXIT:                                                                                  06115500 T  0542:2
     FORGETSPACE(A4); FORGETSPACE(A5);                                                  06115600 T  0542:2
     CELL:=PRTVALUE;                                                                    06115700 T  0544:0
     STREAM(A:=BUFF.[15:15]-1); DS:=13 LIT" END SQUASH.←";                              06115800 T  0545:2
```

```
      SPOUT(BUFF.[15:15]-1);
  $ SET OMIT = SHAREDISK
      UNLOCKDIRECTORY;


  $ POP OMIT
      UNLOCKTOG(USERDISKMASK);

      NOPROCESSTOG:=NOPROCESSTOG-1;
      KILL(TMSCW]);
END SQUASHING;
```

```
06115900 T  0549:2
06115990 T  0551:3
06116000 T  0551:3
                    06116000
                    06116000
06116010 T  0555:1
06116100 T  0555:1
                    06116100
06116200 T  0558:3
06116300 T  0560:0
06116400 T  0560:3
                    06068200
          SIZE= 0562 WORDS
```

```
                    PROCEDURE CHANGEABORT(X); VALUE X; REAL X; FORWARD;%                    06179000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00163
PRT(547) = CHANGEABORT
                  REAL LOOKQ;                                                               06179200 T  0000:0
PRT(550) = LOOKQ
                    PROCEDURE SIGNOFF(VECTOR,FILEBLOCK,PKT);                                06180000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00163
                              VALUE VECTOR,FILEBLOCK,PKT;                                   06181000 T  0000:0
                            ARRAY VECTOR[*],FILEBLOCK[*];%                                  06182000 T  0000:0
                              REAL PKT;                                                     06182100 T  0000:0
                          BEGIN ARRAY NAME LOG;                                             06183000 T  0000:0
STACK(F+1) = LOG
                                INTEGER N,L,I,J,TIMEX;%                                     06184000 T  0000:0
STACK(F+2) = N
STACK(F+3) = L
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = TIMEX
                                INTEGER MIX;                                                06184100 T  0000:0
STACK(F+7) = MIX
                    $ SET OMIT = NOT STATISTICS                                             06184199 T  0000:0
                                REAL TIMEAX,T,A,Q,ESED;                                     06185000 T  0000:0
STACK(F+10) = TIMEAX
STACK(F+11) = T
STACK(F+12) = A
STACK(F+13) = Q
STACK(F+14) = ESED
                    $ SET OMIT = NOT(PACKETS)                                               06185099 T  0000:0
                                REAL UNITNO;                                                06185100 T  0000:0
STACK(F+15) = UNITNO
                                INTEGER ARRAY PM[*];                                        06185105 T  0000:0
STACK(F+16) = PM
                    $ POP OMIT                                                              06185110 T  0000:0
                    $ SET OMIT = NOT(WORKSET AND WORKSETMONITOR)                            06185111 T  0000:0
                    REAL DD;                                                                06185112 T  0000:0
STACK(F+17) = DD
                    $ POP OMIT % WORKSET AND WORKSETMONITOR                                 06185113 T  0000:0
                                SUBROUTINE TIME(T);%                                        06186000 T  0000:0
                                     BEGIN CHANGEABORT(0);%                                 06187000 T  0001:0
                                           WHILE (NT2:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO   06188000 T  0001:3
                                             MIDNIGHT;                                      06188100 T  0004:0
                                                                                                        06188100
                                           LOG[TIMEAX+2] ← NT2;%                            06189000 T  0009:1
                    $ SET OMIT = NOT(STATISTICS)                                            06189099 T  0011:1
                                           STOPLOG(P1MIX,0);                                06190000 T  0011:1
                                           MIX←P1MIX; P1MIX←0;                              06190100 T  0013:3
                                           IDLETIME;%                                       06191000 T  0015:1
                                           OLDIDLETIME ← (LOG[TIMEX] ← VECTOR[3]+%          06192000 T  0015:3
                                                PROCTIME[MIX])+OLDIDLETIME;                 06193000 T  0017:0
                                           PROCTIME[MIX] ← -VECTOR[3];%          %127-     06193500 C  0019:1
                                           LOG[TIMEX+1]←VECTOR[4]+IOTIME[MIX];              06194000 T  0021:0
                    $                                        SET OMIT = NOT WORKSET         06194890 C  0024:0
                                           LOG[TIMEX+2] ← DLAYTIME[MIX];          %710-     06194900 C  0024:0
                    $                                        SET OMIT = WORKSET%710-        06194990 C  0026:1
                    $ SET OMIT = NOT(WORKSET AND WORKSETMONITOR)                            06195090 T  0026:1
                      IF WKSETMONITOR AND (DD=0) THEN                                       06195095 T  0026:1
                         BEGIN                                                              06195100 T  0028:1
```

```
      STREAM(N1 := VECTOR[0], N2 := VECTOR[1],                                          06195105 T  0028:3
        T1 := ((LOG[TIMEX]+0.5)/60 DIV 1),                                              06195110 T  0030:0
        T2 := ((LOG[TIMEX+1]+0.5)/60 DIV 1),                                            06195115 T  0032:2
        T4 = (OLAYTIME[MIX]+59) DIV 60,  % OLAY I/O TIME IN SECS     %710-              06195118 C  0035:2
        T3:=(((LOG[TIMEAX+2]-VECTOR[5].[24:24])+0.5)/60 DIV 1),                         06195120 T  0037:0
        DV:=0, DD := DD := SPACE(10));                                                  06195125 T  0041:1
         BEGIN                                                                          06195130 T  0044:0
         S1:=LOC N1; DS:=LIT" ";                                                        06195135 T  0044:0
         2(SI:=SI+1; DS:=7CHR; DS:=LIT" ");                                             06195140 T  0044:3
         DS:=4LIT"CPU=";                                                                06195145 T  0046:1
         DS:=6DEC; DV:=DI; DI:=DI-6; DS:=5FILL; DI:=DV;                                 06195150 T  0047:0
         DS:=5LIT" I/O=";                                                               06195155 T  0048:1
         DS:=6DEC; DV:=DI; DI:=DI-6; DS:=5FILL; DI:=DV;                                 06195160 T  0049:1
         DS= 6LIT" OLAY=";                                           %710-              06195161 C  0050:2
         DS= 6DEC; DV= DI; DI= DI-6; DS= 5FILL; DI= DV;              %710-              06195162 C  0051:2
         DS:=6LIT" ELAP=";                                                              06195165 T  0052:3
         DS:=6DEC; DV:=DI; DI:=DI-6; DS:=5FILL; DI:=DV;                                 06195170 T  0053:3
         DS:=LIT"=";                                                                    06195175 T  0055:0
         END STREAM STATEMENT;                                                          06195180 T  0055:2
                                                                                                      06195130
      SPOUT(DD);                                                                        06195185 T  0055:3
      END;                                                                              06195190 T  0057:0
                                                                                                      06195100
$ POP OMIT % WORKSET AND WORKSETMONITOR                                                 06195195 T  0057:0
                        STREAM(A=VECTOR[5].[1:23]:B=0);%                                06196000 T  0057:0
                        BEGIN SI = LOC A; DI = LOC A; DS = 8 DEC END;%                  06197000 T  0059:0
                                                                                                      06197000
                        LOG[TIMEAX] = P(XCH);%                                          06198000 T  0060:0
                        LOG[TIMEAX+1] = VECTOR[5].[24:24];%                             06199000 T  0061:2
                $ SET OMIT = NOT(STATISTICS)                                            06199099 T  0064:1
                        NT4 = VECTOR[2].[8:10];%                                        06200000 T  0064:1
                        LOG[TIMEAX+3] = IF VECTOR[1] < 0 THEN (NT4= 99)                 06201000 T  0065:3
                             +2 ELSE NT4 = 3;%                                          06202000 T  0069:0
                        LOG[TIMEAX+3].[1:30]= DATE.[18:30];                             06202100 T  0071:2
                        LOG[TIMEAX+4]:=USERCODE[MIX];                                   06203000 T  0075:1
                $ SET OMIT = NOT(DCLOG  AND DATACOM)                                    06203099 T  0077:2
                        IF TABCNT[MIX]≠0 THEN                                           06203600 T  0077:2
                        BEGIN T:=CLOCK+900;                                             06203650 T  0079:0
                             COMPLEXSLEEP(TABCNT[MIX]=0 OR CLOCK>T);                    06203700 T  0080:3
04568366    ACCIDENTAL ENTRY AT T
                        END;                                                            06203750 T  0087:2
                                                                                                      06203650
                $ SET OMIT = NOT (DATACOM AND NOT DCLOG)                                06203790 T  0087:2
                        PRTROW[MIX].[PSF]:=0;                                           06204000 T  0087:2
                $ SET OMIT = NOT(PACKETS)                                               06205009 T  0090:0
                        UNITNO:=PSEUDOMIX[MIX];                                         06205010 T  0090:0
                        PSEUDOMIX[MIX]:=0;                                              06205020 T  0091:0
                        PM[0]:=LOG[TIMEX  ]/60;                                         06205030 T  0092:1
                        PM[1]:=LOG[TIMEX+1]/60;                                         06205040 T  0094:3
                $ SET OMIT = NOT(WORKSET) OR OMIT                           %759-       06205049 C  0097:3
                        PM[2]:=OLAYTIME[MIX]/60;                            %759-       06205050 P  0097:3
                $ POP OMIT                                                              06205051 T  0099:3
                $ POP OMIT                                                  %759-       06205052 C  0099:3
                        USERCODE[MIX] := 0;                                             06205100 T  0099:3
                        STREAM(S=[NFO[(MIX-1)×NDX]]);%                                  06205200 T  0101:0
                        BEGIN DS=8 LIT "0";  SI=S;  DS=2 WDS;  END;%                    06205300 T  0103:0
                                                                                                      06205300
```

```
$ SET OMIT = NOT STATISTICS
                    JARROW[MIX]:=PRTROW[MIX]:=0;                                    06205540 T  0105:0
                    END TIMET;                                                      06206000 T  0105:0
                                                                                    06206100 T  0107:1
                                                                                                    06187000
$ SET OMIT = NOT(PACKETS)                                                           06206109 T  0109:0
               SUBROUTINE MESSAGE;                                                  06206110 T  0109:0
               IF UNITNO≠0 OR (VECTOR.[24:9]≠0) THEN                                06206120 T  0109:0
               BEGIN                                                                06206130 T  0111:2
               STREAM(A:=[VECTOR[0]],MIX,B:=[PM[0]],T:=T:=SPACE(10));               06206140 T  0112:0
               BEGIN DS:=5LIT" FOR";SI:=A;SI:=SI+1;DS:=7CHR;                        06206150 T  0116:0
               DS:=LIT"/";SI:=SI+1;DS:=7CHR;SI:=LOC MIX;                            06206160 T  0117:3
               DS:=LIT"=";DS:=2DEC;                                                 06206170 T  0119:0
               A:=DI;DI:=DI-2;DS:=FILL;DI:=A; SI:=B;                                06206175 T  0119:3
               DS:=10 LIT ": PROCESS=";DS:=5 DEC;                          %759-    06206180 P  0121:0
               A:=DI;DI:=DI-5;DS:=4FILL;DI:=A;                                      06206190 T  0122:3
               DS:=10 LIT " SECS, IO=";DS:=5 DEC;                          %759-    06206200 P  0123:3
               A:=DI;DI:=DI-5;DS:=4FILL;DI:=A;                                      06206205 T  0125:2
$ SET OMIT = NOT(WORKSET) OR OMIT                                          %759-    06206209 C  0126:2
               DS:=12 LIT " SECS, OLAY=";DS:=5 DEC;                        %759-    06206210 P  0126:2
               A:=DI;DI:=DI-5;DS:=4FILL;DI:=A;                             %759-    06206215 P  0128:2
$ POP OMIT                                                                 %759-    06206216 C  0129:2
               DS:=LIT"←";                                                          06206220 T  0129:2
               END;                                                                 06206230 T  0130:0
                                                                                                    06206150
               SPOUTER(T,IF VECTOR.[24:9] NEQ 0 THEN                                06206240 T  0130:1
                     VECTOR.[24:9] ELSE UNITNO,64);                                 06206250 T  0132:1
               END;                                                                 06206260 T  0135:0
                                                                                                    06206130
$ POP OMIT                                                                          06206261 T  0135:1
               A ← VECTOR[6].[33:15];%                                              06207000 T  0135:1
               ESED:=VECTOR[2].[2:1];                                               06207100 T  0141:1
               T:=Q:=((L:=VECTOR[6].[18:15])+(IF ESED THEN N←0 ELSE                 06208000 T  0142:3
                    N:=FILEBLOCK.[8:10])+60) DIV 25×27;                             06209000 T  0146:1
               LOG:=[M[TYPEDSPACE(T,LOGAREAV)]];%                          %167-    06210000 P  0150:2
               M[LOG INX NOT 1].[9:6] ← 0;%                                         06211000 T  0153:1
$ SET OMIT = NOT(PACKETS)                                                           06211099 T  0156:3
               PM:=[M[SPACE(5)]]&5[8:38:10];                                        06211100 T  0156:3
               M[PM INX NOT 1].[9:6]:=0;                                            06211200 T  0160:2
$ POP OMIT                                                                          06211201 T  0164:1
               J ← A;%                                                              06212000 T  0164:1
               DO BEGIN I ← I+27;%                                                  06213000 T  0165:0
                    DISKIO( T ,-( LOG INX I),26,J);%                                06214000 T  0166:1
                    SLEEP([T],IOMASK);%                                             06215000 T  0168:2
                    J ← LOG[I+1];%                                                  06216000 T  0170:0
               END UNTIL J=0 OR I+53>Q;%                                            06217000 T  0172:0
                                                                                                    06213000
               IF VECTOR[2].[8:10]=0 THEN L ← LOG[29];                              06217100 T  0174:3
               IF(I:=(L-5) MOD 25+I+7) LSS Q-3 THEN                                 06218000 T  0178:1
               IF I MOD 27 = 0 THEN%                                                06219000 T  0182:0
                    BEGIN LOG[I] ← LOG[I+1] ← 0;%                                   06220000 T  0183:3
                         I ← I+2 END;%                                              06221000 T  0187:2
                                                                                                    06220000
$ SET OMIT = NOT(STATISTICS)                                                        06221099 T  0188:3
               LOG[I]:= IF VECTOR[0] LSS 0                                          06222000 T  0188:3
                    THEN IF VECTOR[0]=(-"COBOL  ") THEN 2                           06222100 T  0190:0
                    ELSE IF VECTOR[0]=(-"FORTRAN") THEN 6                           06222200 T  0192:1
                  ELSE IF VECTOR[0]=(-"BASIC  ") THEN 7                             06222300 T  0194:3
```

```
   ELSE IF VECTOR[0]=(="XALGOL ") THEN 9                                    06222400 T  0197:1
   ELSE IF VECTOR[0]=(="TSPOL  ") THEN 10                                   06222500 T  0199:3
   ELSE IF VECTOR[0]=(="COBOL68") THEN 11                                   06222550 T  0202:1
   ELSE 1 ELSE 0;                                                           06222600 T  0204:3
LOG[I+1] ← N DIV 5;%                                                        06223000 T  0207:2
IF(I:=(TIMEX:=I+2)+3) LSS Q-1 THEN                                          06224000 T  0210:0
IF I MOD 27 = 0 THEN%                                                       06225000 T  0213:1
     BEGIN LOG[I] ← LOG[I+1] ← 0;%                                          06226000 T  0215:0
          I ← I+2;%                                                         06227000 T  0218:3
     END;%                                                                  06228000 T  0220:0
                                                                                        06226000
     I ← (TIMEAX ← I)+5;%                                                   06229000 T  0220:0
IF NOT ESED THEN%IF JOB ES-ED THEN NO FPB ENTRIES                           06229100 T  0221:3
FOR J ← 5 STEP 5 UNTIL N DO%                                                06230000 T  0222:1
IF FILEBLOCK[J-1]=0 THEN LOG[TIMEX -1]←*P(DUP)-1 ELSE                       06230100 T  0230:0
     BEGIN IF I MOD 27 = 0 THEN%                                            06231000 T  0234:3
               BEGIN LOG[I] ← LOG[I+1] ← 0;%                                06232000 T  0236:2
                    I ← I+2 END;%                                           06233000 T  0240:1
                                                                                        06232000
               IF I+4 LEQ Q THEN                                            06233100 T  0241:2
          STREAM(A←[FILEBLOCK[J-5]],B←[LOG[I]]);%                           06234000 T  0242:3
               BEGIN SI ← A; DS ← 5 WDS END;%                               06235000 T  0245:2
                                                                                        06235000
       IF I+4 LEQ Q THEN                                                    06235100 T  0246:1
          IF LOG[I+4] < 0 THEN%                                             06236000 T  0247:2
               BEGIN LOG[I+4] ← *P(DUP)+CLOCK+P(RTR);%                      06237000 T  0250:0
                  LOG[I+3].[24:12]←P(DUP,DUP).[24:12]+TINU                  06238000 T  0253:3
                    [NT1←P(XCH).[36:6]-1].[18:12];%                         06239000 T  0256:2
                  TINU[NT1].[18:12] ← 0;%                                   06240000 T  0260:2
               END;%                                                        06241000 T  0263:0
                                                                                        06237000
          IF LOG[I+2].[18:30]=0 THEN                                        06241100 T  0263:0
          LOG[I+2].[18:30]:=DATE.[18:30];%ENTER CURR DATE                   06241200 T  0265:2
          I ← I+5%                                                          06242000 T  0269:3
     END;%                                                                  06243000 T  0270:1
                                                                                        06231000
N ← LOG[TIMEX -1]×5;                                                        06243100 T  0273:1
FORGETSPACE(FILEBLOCK);%                                                    06244000 T  0275:3
J ← 0;%                                                                     06245000 T  0276:3
IF VECTOR[2].[8:10] = 1 THEN%                                               06246000 T  0277:2
     BEGIN DO J ← J+27 UNTIL LOG[J+1] = 0;%                                 06247000 T  0279:0
       WHILE J+27 LSS I AND I LSS Q DO%                                     06248000 T  0283:1
               BEGIN LOG[J+1] ← GETESPDISK;%                                06249000 T  0286:0
                    J ← J+27;%                                              06250000 T  0288:1
               END;%                                                        06251000 T  0289:2
                                                                                        06249000
          I ← 27;%                                                          06252000 T  0290:0
          TIME[T];%                                                         06253000 T  0290:3
          LOG[29]←5×LOG[40]+20;                                             06253500 T  0292:0
          DO BEGIN DISKIO(T,LOG INX I,26,A);%                               06254000 T  0295:1
                    A ← LOG[I+1];%                                          06255000 T  0297:1
                    I ← I+27;%                                              06256000 T  0299:1
                    SLEEP([T],IOMASK);%                                     06257000 T  0300:2
          END UNTIL A = 0;%                                                 06258000 T  0302:0
                                                                                        06254000
     END%                                                                   06259000 T  0303:1
                                                                                        06247000
```

```
                ELSE BEGIN                                                      06260000 T  0303:1
                        DO BEGIN J←J+27;                                        06260100 T  0303:3
                                 FORGETESPDISK(A);%                             06261000 T  0305:0
                                 A ← LOG[J+1];%                                 06262000 T  0305:3
                        END UNTIL A = 0;%                                       06263000 T  0307:3
                                                                                            06260100
    IF LOGFREE=0 THEN TIMEIT ELSE                                               06263100 T  0309:0
    BEGIN       A←J←29;                                                         06263200 T  0311:0
                        LOG[29]←3;                                              06265000 T  0312:3
                        I ← I+6;%                                               06266000 T  0314:1
                        WHILE (J ← J+27) < I DO%                                06267000 T  0315:2
                             BEGIN A ← A+25;%                                   06268000 T  0317:3
                                   STREAM(X←[LOG[J]],Y←[LOG[A]]);%              06269000 T  0319:0
                                        BEGIN SI ← X; DS ← 25 WDS END;%         06270000 T  0321:0
                                                                                            06270000
                                   IF TIMEX ≥ A THEN TIMEX ← TIMEX-2;           06271000 T  0321:3
                                   IF TIMEAX ≥ A THEN TIMEAX ← TIMEAX-2;        06272000 T  0324:1
                             END;%                                              06273000 T  0326:3
                                                                                            06268000
                        N ← (N+L) DIV 5+3;%                                     06278000 T  0327:1
                        L ← 28;%                                                06279000 T  0329:2
                    IF TIMEX+2 LSS Q AND TIMEAX+4 LSS Q THEN                    06279100 T  0330:1
                        TIMEIT; LOGSPACE(L+1 INX LOG,(N-1)×5);                  06280000 T  0333:0
                        END;%                                                   06327000 T  0338:0
                                                                                            06263200
                END;%                                                           06328000 T  0338:0
                                                                                            06260000
$ SET OMIT = NOT(PACKETS)                                                       06328099 T  0338:0
                MESSAGE; FORGETSPACE(PM);                                       06328100 T  0338:0
                IF UNITNO≠0 THEN                                                06328200 T  0340:0
                DRAINO(UNITNO,(VECTOR[2],[8:10]≠1) OR (PKT≠0),                  06328300 T  0340:3
                        ((VECTOR[1]<0) OR (VECTOR[2],[8:10]=3))                 06328400 T  0344:1
                        &VECTOR[6][1:1:1]);                                     06328500 T  0346:3
$ POP OMIT                                                                      06328501 T  0348:2
                FORGETSPACE(LOG);%                                              06329000 T  0348:2
            END SIGNOFF;%                                                       06330000 T  0349:1
                                                                                            06183000
                                                                                SIZE= 0350 WORDS
```

```
                PROCEDURE USERDISKSPECIALCASE(Q,R,UT,J) ;                                   06350000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00175
                VALUE Q,J; REAL R,J; INTEGER Q; ARRAY UT[*] ;                               06350300 T  0000:0
                    BEGIN                                                                   06350600 T  0000:0
                    REAL BUFF=Q,N=J,Z=UT,E=R ;                                              06351000 T  0000:0
STACK(F-4) = BUFF
STACK(F-1) = N
STACK(F-2) = Z
STACK(F-3) = E
                 $ SET OMIT = NOT(SHAREDISK )                                               06351050 T  0000:0
                 $ SET OMIT = SHAREDISK                                                     06351100 T  0000:0
                    REAL NEU,NT; ARRAY UA[*] ;                                              06351104 T  0000:0
STACK(F+1) = NEU
STACK(F+2) = NT
STACK(F+3) = UA
                    DEFINE U=AVTABLE #, AVS=B #, NEU1=J-1 #, NEU2=NT-1 #;                   06351105 T  0000:0
                 $ POP OMIT                                                                 06351106 T  0000:0
                    INTEGER NT1,NT3,NT4,B ;                                                 06351250 T  0000:0
STACK(F+4) = NT1
STACK(F+5) = NT3
STACK(F+6) = NT4
STACK(F+7) = B
                    LABEL L1,L2,L3,UP,PU,BD,WHY,M1,T10 ;                                    06351500 T  0000:0
                    SWITCH SW=L1,L2,L3 ;                                                    06351800 T  0000:0
                    IF Q#0 THEN GO SW[Q-1] ;                                                06352000 T  0000:0
                 $ SET OMIT = NOT(SHAREDISK )                                               06352490 T  0006:0
                L1: BUFF:=R; Z:=0; UNLOCKTOG(USERDISKMASK);                                 06353500 T  0006:0
                                                                                                        06353500
                    IF N LEQ RESERVEDISKSIZE THEN% CALL OUT RESERVES                        06353510 T  0011:0
                    IF (Z:=DIRECTORYSEARCH("RESERVE","DISK   ",6)) NEQ 0 THEN               06353530 T  0011:3
                    BEGIN FORGETSPACE(Z);                                                   06353540 T  0014:2
                          IF N>0 THEN                                                       06353541 T  0015:3
$ SET OMIT = PACKETS
                          BEGIN STREAM(Z:=Z:=SPACE(3));                                     06353542 T  0016:2
                                DS=23 LIT "**RESERVE/DISK REMOVED=";                        06353545 T  0016:2
                                SPOUTFR(Z,25,(NOT LIBMSG) AND 1);          %523=            06353550 T  0019:3
                          END;                                                              06353551 P  0023:1
                                                                                            06353552 T  0025:3
                                                                                                        06353545
                          FORGETSPACE(BUFF); P(XIT);                       %528=            06353555 C  0025:3
                    END OF RESERVE CALL UP;                                                 06353570 T  0026:3
                                                                                                        06353540
                    IF AUTOUNLD THEN                                                        06353580 T  0026:3
                    BEGIN P(P1MIX); AUTOUNLD:=P1MIX:=0;                                     06353590 T  0027:2
                          STREAM(A:=DATE,Z:=Z:=SPACE(10)+2);                                06353600 T  0030:2
                          BEGIN DS:=23 LIT"CC UNLOAD EXPIRED TO XP";                        06353610 T  0034:0
                                SI:=LOC A; SI:=SI+3; DS:=5 CHR;                             06353620 T  0037:1
                                DS:=9 LIT " =/=;END.";                                      06353630 T  0038:0
                          END;                                                              06353640 T  0039:2
                                                                                                        06353610
                          INDEPENDENTRUNNER(P(.CONTROLCARD),Z&31[3:43:5],192);              06353650 T  0039:3
                          P1MIX:=P;                                                         06353660 T  0042:0
                          IF N GEQ 0 THEN                                                   06353670 T  0042:2
                          BEGIN STREAM(Z:=Z:=SPACE(10));                                    06353680 T  0043:1
                                DS:=18 LIT"18 AUTOUNLD RESET=";                             06353690 T  0046:2
                                SPOUT(Z);                                                   06353700 T  0049:1
                    END   END AUTOMATIC UNLOADING;                                          06353710 T  0050:2
                                                                                                        06353680
```

```
                                                                                                                    06353590
                    IF NOT N,[2:1] THEN                                                          06353720 T  0050:2
                    BEGIN IF P1MIX≠0 THEN                                                        06354000 T  0051:2
                         BEGIN                                                                   06354100 T  0052:3
                         NT1 ← NOTERMSET(P1MIX); % NOTE: NT1 IS LOCAL          %537-            06354200 C  0053:1
               WHY:      STREAM(J:=JARROW[P1MIX],P1MIX,N,BUFF);                                  06355000 T  0055:1
                         BEGIN DS←14 LIT "#NO USER DISK:";                                       06356000 T  0057:0
                              SI←J; SI←SI+1; DS←7 CHR;                                           06357000 T  0059:0
                              DS←LIT "/"; SI←SI+1; DS←7 CHR;                                     06358000 T  0059:3
                              SI←LOC P1MIX; DS←LIT "="; DS←2 DEC;                                06359000 T  0060:3
                              J:=DI; DI:=DI-2; DS:=FILL; DI:=J; DS:=LIT"-";                      06359500 T  0061:3
                              SI:=LOC N; DS:=8 DEC; DS:=7 LIT" SEGS,←";                          06360000 T  0063:1
                              DI:=DI-15; DS:=7 FILL;                                             06360500 T  0065:0
                              END;                                                               06360505 T  0065:2
                                                                                                                    06356000
                         SPOUT(BUFF);                                                            06360510 T  0065:3
                         IF AUTODS AND NOTERMSET(P1MIX) THEN               %747-                 06360515 C  0067:0
                              TERMINATE(P1MIX&61[CTF]) ELSE                %747-                 06360516 C  0069:2
                         BEGIN                                             %747-                 06360517 C  0071:1
                         REPLY[P1MIX]:=-VWY&VOK[36:42:6];                                        06360520 T  0075:0
                         COMPLEXSLEEP((REPLY[P1MIX] GTR 0) OR                                    06360530 T  0077:2
                                   (TERMSET(P1MIX) AND NT1));              %537-                 06360540 P  0077:2
06203700      ACCIDENTAL ENTRY AT NT1
                         END;                                              %747-                 06360542 C  0085:1
                                                                                                                    06360517
                         IF NT1 THEN                                       %537-                 06360545 C  0085:1
                         IF TERMSET(P1MIX) THEN                                                  06360550 T  0085:2
                         BEGIN PRTROW[P1MIX],[7:1]←1;                                            06360560 T  0087:2
                              GO TO INITIATE;                                                    06360570 T  0090:2
                         END;                                                                    06360580 T  0091:0
                                                                                                                    06360560
                         IF NOT WHYSLEEP(VWY&VOK[36:42:6]) THEN                                  06360590 T  0091:0
                         BEGIN BUFF←SPACE(10);                                                   06360600 T  0093:0
                              GO TO WHY;                                                         06360610 T  0095:3
                         END;                                                                    06360620 T  0096:1
                                                                                                                    06360600
                         END ELSE                                                                06361000 T  0096:1
                                                                                                                    06354100
                         BEGIN                                                                   06361010 T  0096:1
                         STREAM(N,BUFF);                                                         06361100 T  0096:3
                         BEGIN DS:=20 LIT"#NO USER DISK:MCP = ";                                 06361200 T  0097:3
                              SI:=LOC N; DS:=8 DEC;                                              06361300 T  0100:2
                              DS:=6 LIT" SEGS←";                                                 06361400 T  0101:0
                              DI:=DI-14; DS:=7 FILL;                                             06361500 T  0102:0
                         END;                                                                    06361600 T  0102:2
                                                                                                                    06361200
                         SPOUT(BUFF);                                                            06361610 T  0102:3
                        NT1:=0; DO SLEEP([CLOCK], NOT CLOCK)                                     06361700 T  0104:0
                                       UNTIL (NT1←NT1+1)=30;                                     06361705 T  0104:3
                         END                                                                     06361710 T  0108:3
                                                                                                                    06361010
                    END ELSE FORGETSPACE(BUFF);                                                  06365110 T  0108:3
                                                                                                                    06354000
    P(X,T) ;                                                                                     06380070 T  0110:0
L2: U[J]:=E; E:=NEU:=(NT:=NEUP.NEUF)+2+(NT+1)DIV 2; P(NT); J:=1;                                  06380100 T  0110:1
 $ SET OMIT = SHAREDISK
    NT1:=NT+NT+NT; FORGETSPACE(UT); FIXARRAY(UA,NT2,NT1); E:=0;                                  06380140 T  0116:3
```

```
 $ POP OMIT
UP: IF (NT4:=E MOD 30) LSS (NT3:=(NT1:=U[J].STARTWRD) MOD 30)                    06380141 T  0124:2
    THEN NT4:=NT3 ;                                                              06380150 T  0124:2
    IF (NT2:=(Q:=U[J] AND NUMENTM)+NT4) GTR 1023                                 06380200 T  0127:2
    OR ((Q+E+1) DIV 30+1-E DIV 30) GTR 34 THEN                                   06380250 T  0129:3
BD: BYBY("0DISK IS TOO CHECKERED...PLEASE COMPACT IT+",43) ;                      06380300 T  0132:1
                                                                                 06380350 T  0136:3
                                                                                                  06380350
                                                                                                  06380350
    DISKWAIT(-((UA[NEU1]:=(UA[NEU2+J]:=SPACE(NT2))+NT4)-NT3),Q+NT3,              06380400 T  0146:3
             USERDISKBOTTOM+NT1 DIV 30) ;                                        06380450 T  0154:1
 $ SET OMIT = NOT(SHAREDISK )                                                    06380490 T  0155:3
 $ SET OMIT = SHAREDISK                                                          06380520 T  0155:3
    IF J=1 THEN B:=UA.[CF]+NT+NT-1 ;                                             06380525 T  0155:3
 $ POP OMIT                                                                      06380526 T  0160:0
    M[B+J]:=U[J]&E[TOSTARTWRD] ;                                                 06380550 T  0160:0
    IF (NT1:=Q DIV 4) LSS AVDIFFMIN THEN NT1:=AVDIFFMIN ;                        06380600 T  0163:1
    IF (E:=E+Q+NT1) GTR AVTMAX THEN GO TO BD;                                    06380650 T  0166:1
    IF P(DUP) GEQ J:=J+1 THEN GO UP;  E:=E-NT1;  J:=1 ;                          06380700 T  0169:0
PU: NT2:=(NT3:=P(M[B+J],DUP),STARTWRD)+NT5:=P(XCH) AND NUMENTM ;                 06380750 T  0173:1
    IF P(DUP)#J THEN IF (NT2-1)DIV 30=(NT4+M[B+J+1],STARTWRD)DIV 30 THEN         06380800 T  0178:0
    MOVE(NT1+NT2 MOD 30,UA[NEU1]+NT5-NT1,NT1+UA[NEU1+1]-NT4 MOD 30);             06380850 T  0183:3
    DISKWAIT(UA[NEU1]-NT1+NT3 MOD 30,NT1+NT5,USERDISKBOTTOM+NT3 DIV 30);         06380900 T  0191:3
 $ SET OMIT = NOT(SHAREDISK)                                                     06380924 T  0196:2
    FORGETSPACE(UA[NEU2+J]);                                                     06380950 T  0196:2
    IF P(DUP) GEQ J:=J+1 THEN GO PU ;                                            06381000 T  0198:3
 $ SET OMIT = SHAREDISK                                                          06381020 T  0201:0
    MOVE(NT,[UA[NT+NT]],[AVTABLE[1]]) ;                                          06381070 T  0201:0
 $ POP OMIT                                                                      06381071 T  0203:2
 $ SET OMIT = NOT(SHAREDISK )                                                    06381075 T  0203:2
    FORGETSPACE(UA) ;                                                            06381085 T  0203:2
 $ SET OMIT = NOT(SHAREDISK )                                                    06381095 T  0204:2
    P(DFL,Q&AVS[TOSIZE] OR M,RTN) ;                                              06381250 T  0204:2
L3: P(U[NEUP,NEUF+2+(Q:=J DIV P(M1)) DIV 2],IF Q THEN P.[8:20] ELSE              06381300 T  0206:3
      P.[28:20]) ;                                                               06381310 T  0212:0
    IF U[Q+1].SPEED = 2 THEN                                                     06381320 T  0212:2
        BEGIN % 40-MILL MASK CONSTRUCTION.                                       06381330 T  0214:2
        Q:=P ;                                                                   06381335 T  0215:0
        STREAM(S:=0:Q);                                                          06381340 T  0215:2
            BEGIN                                                                06381345 T  0216:3
            S1:=LOC Q; SKIP 28SB; D1:=LOC S; SKIP 8DB ;                          06381350 T  0216:3
            5(4(IF SB THEN DS:=SET ELSE SKIP DB;SKIP SB); SKIP 4 DB);            06381355 T  0217:3
            S1:=LOC Q; SKIP 28 SB; D1:=LOC S; D1:=D1+2;                          06381360 T  0220:2
            5(4(IF SB THEN DS:=SET ELSE SKIP DB;SKIP SB); SKIP 4 DB);            06381365 T  0221:2
            END STREAM ;                                                         06381380 T  0224:1
                                                                                                  06381345
        END ;                                                                    06381390 T  0224:2
                                                                                                  06381330
    STREAM(MSK:=0:V:=47-(J:=((Q:=J MOD P(M1))+ABS(R)-1) DIV P(T10)),              06381395 T  0224:2
           W:=1+J-Q DIV P(T10));                                                 06381400 T  0229:1
    BEGIN D1:=LOC MSK; SKIP V DB; DS:=W SET; END;                                06381405 T  0231:1
                                                                                                  06381405
    P(LND,LNG,0,LNG,=,RTN);                                                      06381410 T  0232:3
M1:::    @3641100; % DECIMAL 1000000.                                            06381450 T  0234:1
T10:::   @23420;   % DECIMAL 10000.                                             06381500 T  0236:0
    END OF USERDISKSPECIALCASE ;                                                 06381550 T  0237:0
                                                                                                  06350600
                                                                                        SIZE= 0239 WORDS
```

```
                PROCEDURE GETMOREOLAYDISK(MIX);%                                                    06400000 T  000:0
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00183
PRT(551) = GETMOREOLAYDISK
                VALUE   MIX;%                                                                       06401000 T  000:0
                INTEGER MIX;%                                                                       06402000 T  000:0
                   BEGIN INTEGER  I=+1,%                                                            06403000 T  000:0
STACK(F+1) = I
                                  J=+2,%                                                            06404000 T  000:0
STACK(F+2) = J
                                  T=+3;%                                                            06405000 T  000:0
STACK(F+3) = T
                         ARRAY    A=+4[*];%                                                         06406000 T  000:0
STACK(F+4) = A
                         REAL MSCW=-2;                                                              06406500 T  000:0
STACK(F-2) = MSCW
                         REAL     RCW=+0;%                                                          06407000 T  000:0
STACK(F+0) = RCW
                         LABEL EXIT;%                                                               06408000 T  000:0
                    DEFINE DALOCMAXSZ =                                                             06408100 T  000:0
                $ SET OMIT = NOT(AUXMEM)                                                            06408199 T  000:0
                $ SET OMIT = AUXMEM                                                                 06408299 T  000:0
                                    127#; %DALOC SIZE MUST = 9 INITIALLY,                           06408300 T  000:0
                $ POP OMIT                                                                          06408301 T  000:0
                      P(0, 0, 0, 0);  TOGLE ← TOGLE OR STACKMASK;%                                  06410000 T  000:0
                      IF (T←DALOC[MIX,0].[CF]+1)=DALOCMAXSZ THEN BEGIN                              06411000 T  002:1
                           TERMINATE (MIX&111[CTF]);                                %517-         06411010 P  005:3
                          GO TO EXIT; END;                                                          06411030 T  007:0
                                                                                                                06411000
                      IF T=DALOCROW[MIX].[8:10] THEN%                                               06412000 T  007:2
                      BEGIN IF (J←T+P(DUP) - 1)=129 THEN J←DALOCMAXSZ;                              06413000 T  009:0
                           WHILE (I := GETSPACE(J, 0, 3)+2)=2 DO                                    06414000 T  013:0
                             SLEEP([CLOCK], NOT CLOCK);                                             06415000 T  016:1
                           MOVE(T, DALOCROW[MIX], I);                                               06416000 T  018:2
                           FORGETSPACE(DALOCROW[MIX]);                                              06417000 T  020:1
                           DALOCROW[MIX] := (*P(DUP)) & I[CTC] & J[8:38:10];                        06417500 T  021:1
                           M[I-2].[9:6] := MIX;                                                     06418000 T  024:1
                      END AIT TYPE ACTION;%                                                         06419000 T  027:2
                                                                                                                06413000
                      IF (I ← GETUSERDISK(500 OR MEMORY))=0 THEN GO TO EXIT;%                       06420000 T  027:2
                      DALOC[MIX,0] ← (*P(DUP))&(T+1)[CTC];%                                         06421000 T  030:2
                      DALOC[MIX,T] ← I;%                                                            06422000 T  033:2
                      DALOC[MIX,T+1] ← 0;%                                                          06423000 T  035:1
EXIT: OLAYMASK ← TWO(MIX) OR OLAYMASK;%                                                             06424000 T  037:2
                      KILL([MSCW]);                                                                 06425000 T  039:1
END GET MORE OVERLAY DISK FOR A MIX INDEX;%                                                         06426000 T  040:0
                                                                                                                06403000
                                                                                                  SIZE= 0041 WORDS
```

```
                REAL PROCEDURE SECURITYCHECK(MID,FID,USERID,HEADER);                                    06460000 T  00010
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00185
                VALUE MID,FID,USERID;                                                                  06460100 T  00010
                REAL MID,FID,USERID,HEADER;                                                            06460200 T  00010
                %   MID         MULTI FILE ID OF FILE TO BE CHECKED                                    06460300 T  00010
                %   FID         FILE ID OF FILE TO BE CHECKED                                          06460400 T  00010
                %   USERID      USER IDENTIFICATION                                                    06460500 T  00010
                %   HEADER                                                                             06460600 T  00010
                %       >512        CORE ADDRESS OF HEADER IN 33:15. JUST CHECK IT.                    06460700 T  00010
                %       >0, <512    VALUE FOR DIRECTORYSEARCH. FIND THE FILE AND PASS                  06460800 T  00010
                %                   BACK THE HEADER IN ADDITION TO SECURITY INFO.                      06460900 T  00010
                %       <0          DISK ADDRESS OF HEADER. READ IT IN AND CHECK IT. BUT               06460950 T  00010
                %                   DONT PASS IT BACK.                                                 06460960 T  00010
                %                                                                                      06461100 T  00010
                %   RESULT FROM SECURITYCHECK                                                          06461200 T  00010
                %       =0      NO LEGITIMATE USER FOUND                                               06461300 T  00010
                %       =2      TERTIARY USER  ( INPUT ONLY)                                           06461400 T  00010
                %       =3      SECONDARY USER (INPUT/OUTPUT)                                          06461500 T  00010
                %       =7      PRIMARY USER (INPUT/OUTPUT/LIB MAINT.)                                 06461600 T  00010
                BEGIN                                                                                  06462000 T  00010
                    REAL T2,DKSGROW,CODES,ROWS,ROW,DKADR,ROWSZ,C,USER,TYPE,SH;                         06462100 T  00010
STACK(F+2) = T2
STACK(F+3) = DKSGROW
STACK(F+4) = CODES
STACK(F+5) = ROWS
STACK(F+6) = ROW
STACK(F+7) = DKADR
STACK(F+10) = ROWSZ
STACK(F+11) = C
STACK(F+12) = USER
STACK(F+13) = TYPE
STACK(F+14) = SH
                    REAL I=DKSGROW, FPBSIZE=CODES;                                                     06462105 T  00010
STACK(F+3) = I
STACK(F+4) = FPBSIZE
                    ARRAY FH[*],FPB=ROW[*];                                                            06462110 T  00010
STACK(F+15) = FH
STACK(F+6) = FPB
                    LABEL FOUND;                                                                       06462120 T  00010
                    LABEL EXYT,NOTFOUND,LOOK,WHY,FORGET;                                               06462200 T  00010
                REAL SUBROUTINE DIRSRH;                                                                06463000 T  00010
                    BEGIN                                                                              06463100 T  00011
                LOOK:   IF (T2:=DIRECTORYSEARCH(MID,FID,HEADER)) LSS 64 THEN                           06463200 T  00011
                WHY:    BEGIN                                                                          06463210 T  00031
                            IF T2=0 THEN FILEMESS("#NO FIL","ON DISK",MID,FID,0,0,0)                   06463220 T  00033
                              ELSE IF T2=1 THEN BEGIN P(DEL); TYPE:=-1; GO EXYT; END                   06463225 T  00041
                                                                                                                 06463225
                              ELSE IF T2=2 THEN FILEMESS("#SYSFIL","ERROR  ",                          06463230 T  00130
                                                    MID,FID,0,0,0);                                    06463240 T  00141
                            IF AUTODS THEN TERMINATE(P1MIX&61[CTF]) ELSE          %747-                06463260 C  00171
                            BEGIN                                                 %747-                06463270 C  00193
                            REPLY[P1MIX]:=-(SH:=VWY&VOK[36:42:6]&VIL[30:42:6]);                        06463280 T  00230
                            COMPLEXSLEEP((REPLY[P1MIX] GTR 0) OR TERMSET(P1MIX));                      06463300 T  00270
06360540    ACCIDENTAL ENTRY AT 1
                            END;                                                  %747-                06463310 C  00343
                                                                                                                 06463270
                            IF TERMSET(P1MIX) THEN GO INITIATE;                                        06463340 T  00343
```

```
                IF NOT WHYSLEEP(SH) THEN GO TO WHY;
                IF (SH←T2←REPLY[P1MIX],[FF]) > PSEUDOMAXT THEN  %  IL%540=
                BEGIN STREAM(T2:);
                     BEGIN S1:=T2;
                     LL:  SI:=S1+1; IF SC≠"L" THEN GO TO LL;
                          S1:=S1+1; T2:=SI;
                     END;

                     T2:=P;
                     FPBSIZE:=(FPB:=PRT[P1MIX,3]),[8:10];
                     FOR I:=0 STEP ETRLNG UNTIL FPBSIZE DO
                        IF (FPB[I] EQV MID)=NOT 0 THEN
                        IF (FPB[I+1] EQV ABS(FID))=NOT 0 THEN GO FOUND;
FOUND:               NAMEID(C,T2);  MID:=C;  NAMEID(C,T2);
                     NAMEID(C,T2);  FID:=C&FID[1:1:1];
                     IF I LSS 1020 THEN
                     BEGIN FPB[I]:=MID;
                          FPB[I+1]:=C;
                     END;

                     FORGETSPACE(SH=1);
                END ELSE LABELTABLE[T2]:=-(*P(DUP));                    %764=

                     REPLY[P1MIX]:=0;
                     GO TO LOOK;
                END;

                DIRSRH := T2;
           END DIRSRH;

                IF HEADER GEQ 0 THEN
                     SH:=IF HEADER GTR 511 THEN HEADER ELSE DIRSRH
                ELSE DISKWAIT(-(SH:=SPACE(30)),30,HEADER,[CF]);
                FH:=IOQUE&SH[CTC];
                IF(FH[2] EQV 0)=NOT 0 OR (ABS(USERID) EQV ABS(FH[2]))=NOT 0
                     OR (USERID EQV MCP)=NOT 0 THEN TYPE←7 ELSE%
                          IF HEADER<0 THEN GO EXYT ELSE
                IF (FH[5] EQV @14)=NOT 0 THEN%
                     IF (FH[6] EQV @14)=NOT 0 THEN TYPE←2 ELSE TYPE←3;%
                IF TYPE ≠ 0 THEN GO TO EXYT;
                IF FH[5].[1:1] THEN
                BEGIN IF (SH:=DIRECTORYSEARCH(ABS(FH[5]),FH[6],19))=0
                     THEN BEGIN TYPE:=0; GO TO EXYT END;

                 M[SH+4].[11:1]:=1;
                 STREAM(DATE,J:=5); BEGIN SI:=LOC DATE; DS:=80CT; END;

                 M[SH+3].[12:18]:=JUNK;
                 DISKWAIT(SH,[CF],-30,SH,[FF]);
$ SET OMIT = SHAREDISK
                 UNLOCKDIRECTORY;


$ POP OMIT
                 DKSGROW:=M[SH INX 8];
                 CODES:=SPACE(30);
                 ROWS:=(M[SH INX 9] AND 31)-1;
```

```
06463360 T  0037:1
06463380 P  0038:2
06463400 T  0041:0
06463420 T  0042:2
06463440 T  0042:3
06463460 T  0043:3
06463480 T  0044:1
                 06463420
06463500 T  0044:2
06463520 T  0045:0
06463540 T  0047:2
06463560 T  0049:0
06463580 T  0050:3
06463600 T  0056:2
06463620 T  0059:1
06463640 T  0062:0
06463660 T  0062:3
06463680 T  0064:2
06463700 T  0066:1
                 06463660
06463720 T  0066:1
06463740 P  0067:2
                 06463400
06463760 T  0069:3
06463780 T  0071:0
06463800 T  0071:2
                 06463210
06463810 T  0071:2
06463820 T  0072:0
                 06463100
06463840 T  0072:1
06463860 T  0077:0
06463880 T  0080:1
06463900 T  0086:0
06463910 T  0087:2
06463920 T  0090:3
06463925 T  0095:2
06463930 T  0096:3
06463940 T  0099:0
06463950 T  0103:3
06463960 T  0105:0
06463970 T  0106:0
06463980 T  0109:0
                 06463980
06463982 T  0111:1
06463984 T  0114:2
                 06463984
06463986 T  0116:1
06463988 T  0119:2
06463990 T  0122:0
06463992 T  0122:0
                 06463992
                 06463992
06463994 T  0125:2
06463996 T  0125:2
06464000 T  0127:2
06464050 T  0129:3
```

```
          FOR ROW:=0 STEP 1 UNTIL ROWS DO                                                  06464100 T  0132:3
          BEGIN IF (DKADR:=MISH INX 10+ROW])=0 THEN                                        06464200 T  0135:0
NOTFOUND:       BEGIN TYPE := 0;                                                           06464300 T  0138:0
FORGET:                 FORGETSPACE(CODES): FORGETSPACE(SH):GO TO EXYT;                  06464400 T  0139:1
                END;                                                                     06464500 T  0141:1
                                                                                                     06464300
                ROWSZ := DKADR + DKSGROW;                                                06464600 T  0141:1
                WHILE DKADR < ROWSZ DO                                                   06464700 T  0142:2
                BEGIN DISKIO(C,1-CODES,30,DKADR);                                        06464800 T  0143:3
                      SLEEP([C],IOMASK);                                                 06464900 T  0145:3
                      FOR C:=0 STEP 1 UNTIL 29 DO                                        06465000 T  0147:1
                     BEGIN IF((USER:=NFLAG(M[CODES INX C]))EQV @114)=                     06465100 T  0148:0
                           NOT 0 THEN GO TO NOTFOUND;                                    06465200 T  0150:3
                           IF (USER EQV @14)≠ NOT 0 THEN                                 06465210 T  0152:0
                                   IF USER.[3:3]=0 THEN                                  06465220 T  0153:2
                                   BEGIN                                                 06465230 T  0155:1
                           IF (USERID EQV ABS(USER))=NOT 0 THEN                          06465300 T  0155:3
                           BEGIN TYPE :=                                                 06465400 T  0157:2
                                 IF USER < 0 THEN 2 ELSE 3;                              06465500 T  0158:0
                                 GO TO FORGET;                                           06465600 T  0160:3
                      END;                                                               06465700 T  0161:1
                                                                                                     06465400
                                   END ELSE                                              06465800 T  0161:1
                                                                                                     06465230
                                   BEGIN                                                 06465805 T  0161:1
                                   IF P1MIX ≠ 0 THEN                                     06465810 T  0161:3
                                   IF(ABS(JAR[P1MIX,0])EQV                               06465820 T  0162:2
                                     USER.[6:42])= NOT 0 THEN                            06465830 T  0164:1
    IF((IF JAR[P1MIX,0]<0 THEN "DISK   "ELSE JAR[P1MIX,1])EQV                            06465840 T  0166:2
                                     M[CODES INX C+1].[6:42])= NOT 0                     06465850 T  0170:3
                                   THEN                                                  06465860 T  0174:1
                                   BEGIN                                                 06465870 T  0175:0
                                     TYPE := USER.[3:3];                                 06465880 T  0175:2
                                     GO TO FORGET;                                       06465900 T  0176:3
                                   END; C:=C+1;                                          06465910 T  0179:0
                                                                                                     06465870
                                   END;                                                  06465920 T  0180:1
                                                                                                     06465805
                      END; % 30 USERS                                                    06466000 T  0180:1
                                                                                                     06465100
                      DKADR := DKADR + 1;                                                06466100 T  0182:2
                END; % ROW                                                               06466200 T  0183:3
                                                                                                     06464800
          END; % ROWS                                                                    06466300 T  0184:1
                                                                                                     06464200
          GO TO NOTFOUND;                                                                06466310 T  0186:2
     END; % NO SECURITY BLOCK FILE                                                       06466400 T  0187:0
                                                                                                     06463970
     TYPE :=0;                                                                           06466500 T  0187:0
EXYT:                                                                                    06466600 T  0187:3
     IF HEADER LSS 512 THEN                                                              06466610 T  0187:3
     IF HEADER GEQ 0 THEN HEADER:=FH ELSE FORGETSPACE(FH);                               06466620 T  0188:2
     SECURITYCHECK :=TYPE;                                                               06466700 T  0193:0
END SECURITYCHECK;                                                                       06466800 T  0193:3
                                                                                                     06462000
                                                                                                SIZE= 0195 WORDS
```

```
                 $ SET OMIT = NOT(DATACOM )                                                                  06499999 T  000010
                % * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *%JS    06845900 T  000010
                 $ SET OMIT = NOT(DCLOG AND DATACOM )                                                        06845999 T  000010
                DEFINE KLUMP=@174#;% @173 IS RESERVED FOR THE DISK ADDRESS                                   07000000 T  000010
                COMMENT LASTCDNUM, FIRSTDECK, AND LASTDECK ARE STORED IN THE                                 07000010 T  000010
                        FIRST THREE WORDS OF THE DISK SEGMENT LOCATED AT DIRECTORYTOP                        07000015 T  000010
                        +3. IN A NON SHARED DISK SYSTEM, THEY ARE WRITTEN OUT EACH                           07000020 T  000010
                        TIME ONE OF THEM IS CHANGED SO THAT THEY WILL BE PRESERVED                           07000025 T  000010
                        IF A HALT/LOAD OCCURS. IN A SHARED DISK SYSTEM, THEY ARE                             07000030 T  000010
                        READ INTO THE PRT WITH A READ-LOCK COMMAND EACH TIME THEY ARE                        07000035 T  000010
                        USED. THIS PROVIDES CONTROL DECK INTERLOCKING BETWEEN SYSTEMS                        07000040 T  000010
                        IN ADDITION TO PASSING THE INFORMATION BETWEEN SYSTEMS.                              07000045 T  000010
                END COMMENT;                                                                                 07000050 T  000010
                INTEGER LASTCDNUM=@174;                                                                      07000100 T  000010
PRT(174) = LASTCDNUM
                REAL FIRSTDECK=@175;                                                                         07000200 T  000010
PRT(175) = FIRSTDECK
                REAL LASTDECK=@176;                                                                          07000300 T  000010
PRT(176) = LASTDECK
                DEFINE LOCKCONTROLDECKS=BEGIN SLEEP([TOGLE],CDMASK); LOCKTOG(CDMASK);                        07001000 T  000010
                 $ SET OMIT = NOT(SHAREDISK)                                                                 07001099 T  000010
                    END#,                                                                                    07001200 T  000010
                    UNLOCKCONTROLDECKS=BEGIN                                                                 07001300 T  000010
                 $ SET OMIT = NOT(SHAREDISK)                                                                 07001399 T  000010
                       UNLOCKTOG(CDMASK) END#;                                                               07001500 T  000010
                REAL PROCEDURE NEXTCDNUM(UPDATE); VALUE UPDATE; BOOLEAN UPDATE;                              07001600 T  000010
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00192
PRT(552) = NEXTCDNUM
                BEGIN                                                                                        07001620 T  000010
                     LOCKCONTROLDECKS;                                                                       07001640 T  000010
                                                                                                                      07001640
                                                                                                                      07001640
                     LASTCDNUM := (LASTCDNUM MOD 9999) +1;                                                   07001660 T  000511
                     STREAM(CDNUM:=0: LNUM:=LASTCDNUM);                                                      07001680 T  000710
                     BEGIN                                                                                   07001700 T  000811
                          SI:=LOC LNUM; DI:=LOC CDNUM; DS:=8 DEC;                                            07001720 T  000811
                     END;                                                                                    07001740 T  000910
                                                                                                                      07001700
                     NEXTCDNUM := P;                                                                         07001760 T  000911
                     IF UPDATE THEN                                                                          07001780 T  000913
                     BEGIN                                                                                   07001800 T  001010
                          DISKWAIT(KLUMP,-3,DIRECTORYTOP+3);                                                 07001820 T  001012
                          UNLOCKTOG(CDMASK);                                                                 07001840 T  001212
                                                                                                                      07001840
                     END;                                                                                    07001860 T  001610
                                                                                                                      07001800
                END;                                                                                         07001880 T  001610
                                                                                                                      07001620
                                                                                                                SIZE= 0019 WORDS
```

```
                PROCEDURE STARTADECK(N); VALUE N; REAL N; FORWARD;                                  07002000 T  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00193
PRT(553) = STARTADECK
                PROCEDURE ENTERCONTROLDECK(H); VALUE H; ARRAY H[*]; FORWARD;                        07002100 T  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00193
PRT(554) = ENTERCONTROLDECK
                 REAL RUNUMBER;%
PRT(555) = RUNUMBER                                                                                 07003000 T  0000:0

                %##########################################################################  %891-      07003250 C  0000:0
                                                                                            %891-      07003251 C  0000:0
                                                                                            %891-      07003252 C  0000:0
                PROCEDURE FBTABLE;                                                          %890-      07003270 C  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00193
PRT(556) = FBTABLE
                BEGIN  LABEL L;                                                             %890-      07003280 C  0000:0
                   P(0,XIT,,L,DEL);                                                         %890-      07003290 C  0000:0
                L:::                                                                        %890-      07003300 C  0001:0
                0," 32?","1???","0TS?","/???","=LK?","J???","????","????","&CB?","A???",   07003310 C  0001:0
                "#???","????","????","????","????","????",                                  %890-      07003312 C  0012:0
                "9???","????","Z???","????","R???","????","????","????","I???","????",     07003320 C  0018:0
                "????","????","????","????","????","????",                                  %890-      07003322 C  0028:0
                "8#:?","????","Y,×?","????","Q$]?","????","????","????","H,[?","????",     07003330 C  0034:0
                "????","????","????","????","????","????",                                  %890-      07003332 C  0044:0
                @07770675,@05770413,@067146616,@65176473,                                   %892-      07003340 C  0050:0
                @47574656,@45554453,"????","????", @27742620,@25352436,                    %890-      07003342 C  0054:0
                "????","????","????","????","????","????",                                  %891-      07003344 C  0060:0
                   %QMARKADDRESSES                                                          %890-      07003350 C  0066:0
                "????","????","????","????","????","????","????","????","????","????",     07003352 C  0066:0
                "????","????","????","????","????","????",                                  %890-      07003354 C  0076:0
                 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,     % SPACE FOR ADDRESSES                %890-      07003360 C  0082:0
                 0,0,0,0,0,0,0;                                                             %890-      07003370 C  0098:0
                END;                                                                        %890-      07003380 C  0105:0
                                                                                                                07003280
                                                                                                      SIZE= 0106 WORDS
```

```
                %##########################################################################  %891-        07003390 C  0000:0
                                                                                            %891-        07003391 C  0000:0
                REAL PROCEDURE SETUPEBTABLE;                                                %891-        07003392 C  0000:0
                                                                                            %890-        07003400 C  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00197
PRT(557) = SETUPEBTABLE
                BEGIN REAL ADR; LABEL EXIT;                                                 %890-        07003410 C  0000:0
STACK(F+2) = ADR
                DEFINE STOREADDRESS=                                                        %890-        07003412 C  0000:0
                X:=SI; SI:=LOC X; SI:=SI+5;                                                 %890-        07003414 C  0000:0
                DS:=3 CHR; DI:=DI+5 #;                                                      %890-        07003416 C  0000:0
                   EBTABLE;                                                                 %890-        07003420 C  0000:0
                P(FMT(ADR:=*P(,EBTABLE) INX NOT 1)]],IOR);                                  %890-        07003430 C  0001:0
                    SETUPEBTABLE:=ADR:=ADR,[CF]+3;                                          %890-        07003440 C  0003:2
                    IF  M[ADR+81] = 0 THEN                                                  %890-        07003450 C  0005:3
                STREAM (X:=0,TABLE:=ADR,QMARKTABLEADDRESS:=ADR+32,LOCATIONS:=ADR+40);                    07003462 C  0007:3
                BEGIN                                                                       %890-        07003464 C  0010:3
                DI:=TABLE;  SI:=TABLE; SI:=SI+8;                                            %890-        07003466 C  0010:3
                2(40(SI:=SI+4; DS:=4 CHR;));                                                %890-        07003468 C  0011:2
                   %FIRST FILL ALL OF ADDRESSES WITH ADDRESS OF ?S                          %890-        07003482 C  0013:0
                SI:=QMARKTABLEADDRESS;                                                      %890-        07003484 C  0013:0
                X:=SI;                                                                      %890-        07003486 C  0013:1
                SI:=LOC X; SI:=SI+5;  %POINT SI AT ADDRESS OF QMARKS                        %890-        07003488 C  0013:2
                DI:=LOCATIONS;                                                              %890-        07003490 C  0014:0
                DS:=3 CHR;                                                                  %890-        07003492 C  0014:1
                SI:=LOCATIONS;                                                              %890-        07003494 C  0014:2
                DS:=63 WDS;                                                                 %890-        07003496 C  0014:3
                   %NOW SET ADDRESSES FOR VALID CHARS INTO EBCDIC TABLE                     %890-        07003498 C  0015:0
                SI:=TABLE;                                                                  %890-        07003500 C  0015:0
                DI:=LOCATIONS;                                                              %890-        07003502 C  0015:1
                3(STOREADDRESS;   %STORE ADDRESSES FOR LP=0,1,2                             %890-        07003504 C  0015:2
                   %CORRESPONDING TO BLANK,9 HOLE,8 HOLE                                    %890-        07003506 C  0017:0
                SI:=X;                                                                      %890-        07003508 C  0017:0
                SI:=SI+63; SI:=SI+1);  %SKIP 8 WORDS DOWN TABLE                             %890-        07003510 C  0017:1
                DI:=DI+8;   %LP=3 IS INVALID                                                %890-        07003512 C  0018:0
                STOREADDRESS;    %LP=4..... 7 HOLE                                          %890-        07003514 C  0018:1
                DI:=DI+8;    %LP=5 IS INVALID                                               %890-        07003516 C  0019:2
                SI:=X;                                                                      %890-        07003518 C  0019:3
                SI:=SI+1;    %SKIP 1 CHAR DOWN TABLE                                        %890-        07003520 C  0020:0
                STOREADDRESS;     %LP=6....7&8 HOLES TOGETHER                               %890-        07003522 C  0020:1
                DI:=DI+8;                                                                   %890-        07003524 C  0021:2
                SI:=X;                                                                      %890-        07003526 C  0021:3
                SI:=SI+1;                                                                   %890-        07003528 C  0022:0
                STOREADDRESS;     %LP=8....6 HOLE                                           %890-        07003530 C  0022:1
                DI:=DI+8;                                                                   %890-        07003532 C  0023:2
                SI:=X;                                                                      %890-        07003534 C  0023:3
                SI:=SI+1;                                                                   %890-        07003536 C  0024:0
                STOREADDRESS;     %LP=10....6&8 HOLES TOGETHER                              %890-        07003538 C  0024:1
                DI:=DI+40;    %MISS 5 WORDS...LP=11,12,13,14,15                             %890-        07003540 C  0025:2
                SI:=X;                                                                      %890-        07003542 C  0025:3
                SI:=SI+1;                                                                   %890-        07003544 C  0026:0
                STOREADDRESS;     %LP:=16.... 5 HOLE                                        %890-        07003546 C  0026:1
                DI:=DI+8;                                                                   %890-        07003548 C  0027:2
                SI:=X;                                                                      %890-        07003550 C  0027:3
                SI:=SI+1;                                                                   %890-        07003552 C  0028:0
                STOREADDRESS;     %LP=18.... 5&8 HOLES TOGETHER                             %890-        07003554 C  0028:1
                2(DI:=DI+52);     %MISS 13 WORDS....LP=19-31                                %890-        07003556 C  0029:2
```

```
SI:=X;
SI:=SI+1;
STOREADDRESS;      %LP=32..... 4 HOLE
DI:=DI+8;
SI:=X;
SI:=SI+1;
STOREADDRESS;      %LP=34..... 4&8 HOLES TOGETHER
END;

END;
```

```
%890-        07003558 C  0030:1
%890-        07003560 C  0030:2
%890-        07003562 C  0030:3
%890-        07003564 C  0032:0
%890-        07003566 C  0032:1
%890-        07003568 C  0032:2
%890-        07003570 C  0032:3
%890-        07003580 C  0034:0
                                 07003464
%890-        07003590 C  0034:1
                                 07003410
                       SIZE= 0035 WORDS
```

```
                %*************************************************************************      %890-      07003600 C  0000:0
                   STREAM PROCEDURE EBCDICCONVERT(INTO,TABLE,POINTERS);                        %890-      07003610 C  0000:0
PRT(560) = EBCDICCONVERT
                VALUE INTO,TABLE,POINTERS;                                                     %890-      07003615 C  0000:0
                %*************************************************************************      %890-      07003620 C  0000:0
                BEGIN                                                                          %890-      07003630 C  0000:0
                                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00631
                LOCAL HP,LP,SRCE,DEST,HPPTR,LPPTR;                                             %890-      07003640 C  0000:0
                   %POINT HPPTR & LPPTR TO LAST CHAR OF HP,LP                                  %890-      07003650 C  0000:0
                SI:=LOC HP;                                                                    %890-      07003660 C  0000:0
                SI:=SI+7;                                                                      %890-      07003670 C  0000:1
                HPPTR:=SI;      %HIGH PART                                                     %890-      07003680 C  0000:2
                SI:=LOC LP;                                                                    %890-      07003690 C  0000:3
                SI:=SI+7;                                                                      %890-      07003700 C  0001:0
                LPPTR:=SI;      %LOW PART                                                      %890-      07003710 C  0001:1
                SI:=INTO;  SI:=SI+8;                                                           %890-      07003720 C  0001:2
                DI:=INTO;                                                                      %890-      07003730 C  0002:0
                   %START CHARACTER TRANSLATE LOOP                                             %890-      07003740 C  0002:1
                2(40(                                                                          %890-      07003750 C  0002:1
                DEST:=DI;                                                                      %890-      07003760 C  0002:3
                   %TRANSFER LOW & HIGH PARTS                                                  %890-      07003770 C  0003:0
                DI:=HPPTR;                                                                     %890-      07003780 C  0003:0
                DS:=1 CHR;                                                                     %890-      07003790 C  0003:1
                DI:=LPPTR;                                                                     %890-      07003800 C  0003:2
                DS:=1 CHR;                                                                     %890-      07003810 C  0003:3
                SRCE:=SI;       %STORE SI FOR NEXT PASS THRU LOOP                              %890-      07003820 C  0004:0
                   %NOW FIND THE POINTER INTO TABLE APPROPRIATE TO LP                           %890-      07003830 C  0004:1
                SI:=POINTERS;                                                                  %890-      07003840 C  0004:1
                LP(SI:=SI+8);                                                                  %890-      07003860 C  0004:2
                SI:=SC;       %SI NOW POINTS INTO TABLE @ POINT DEPENDANT ON LP                %890-      07003870 C  0005:2
                DI:=DEST;                                                                      %890-      07003880 C  0005:3
                SI:=SI+HP;       %SKIP SI THROUGH TABLE HP CHARS                               %890-      07003890 C  0006:0
                DS:=CHR;                                                                       %890-      07003900 C  0006:2
                SI:=SRCE));                                                                    %890-      07003910 C  0006:3
                DI:=TABLE; DI:=DI+3;            %POINT TO QMRK                                 %890-      07003920 C  0007:2
                END CONVERT;                                                                   %890-      07003950 C  0008:0
                                                                                                                        07003630
                                                                                                                SIZE= 0009 WORDS
```

```
                PROCEDURE COM23;%                                                                    07004000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00199
                  BEGIN%                                                                             07005000 T  0000:0
                  REAL INBUFF,%  ADDRESS OF THE INPUT BUFFER,                                        07006000 T  0000:0
STACK(F+1) = INBUFF
                       OUTBUFF,%     "    "   "  OUTPUT BUFFER,                                     07006010 T  0000:0
STACK(F+2) = OUTBUFF
                     FIRSTCARD,%     "    "   "  CARD IMAGE OF THE FIRST CARD                      07006020 T  0000:0
STACK(F+3) = FIRSTCARD
                    OUTBUFFOLD,%     "    "   "  LAST OUTPUT BUFFER,                               07006030 T  0000:0
STACK(F+4) = OUTBUFFOLD
                       RESERVE,%     "    "  30 WDS OF CORE USED TO BUILD THE                       07006040 T  0000:0
STACK(F+5) = RESERVE
                       T,T1,T2,%  TEMPORARY VARIABLES,                                             07006050 T  0000:0
STACK(F+6) = T
STACK(F+7) = T1
STACK(F+10) = T2
                         R,L,N,%     "         "     USED TO COUNT CARD IMAG                       07006060 T  0000:0
STACK(F+11) = R
STACK(F+12) = L
STACK(F+13) = N
                             Q,%  USUALLY INDICATES COL 1 HAS A QUESTION MARK                       07006070 T  0000:0
STACK(F+14) = Q
                            IU,%  UNIT NUMBER OF THE INPUT UNIT,                                   07006080 T  0000:0
STACK(F+15) = IU
                            OU,%   "     "    "   "  OUTPUT UNIT,                                  07006090 T  0000:0
STACK(F+16) = OU
                         FIRST,%  TRUE IF THE FIRST CARD OF A DECK,                                07006100 T  0000:0
STACK(F+17) = FIRST
                             S,%  USED AS A TEMPROARY VARIABLE IN SUBROUTINE                       07006140 T  0000:0
STACK(F+20) = S
                              %   AND TO HAND THE UNIT NUMBER TO SUBROUTINE S                      07006150 T  0000:0
                            D;%   USED AS A MASK TO SLEEP UNTIL DISK OPERATIO                      07006160 T  0000:0
STACK(F+21) = D
                              %   ARE COMPLETED.                                                   07006161 T  0000:0
                    $ SET OMIT = NOT(PACKETS)                                                      07006169 T  0000:0
                      REAL VERYFIRST,  %TRUE IF THE FIRST CARD OF THE FIRST DECK                   07006172 T  0000:0
STACK(F+22) = VERYFIRST
                                %IN SINCE LOAD CONTROL WAS EXECUTED,                               07006174 T  0000:0
                          FIRSTORSEC,  %TRUE IF THE FIRST OR SEC. CARD OF NEW DECK                 07006176 T  0000:0
STACK(F+23) = FIRSTORSEC
                             PTYPE,%  CONTAINS THE RESULT OF REAL SUBROUTINE                       07006180 T  0000:0
STACK(F+24) = PTYPE
                              %   PACKETCARD.SAVING SOME NEEDLESS EXTRA                            07006190 T  0000:0
                              %   CALLS ON IT TO CHECK THE TYPE OF A CARD.                         07006200 T  0000:0
                              %   THE VALUE OF PTYPE IS AS FOLLOWS:                                07006210 T  0000:0
                              %             0 = NOT A PACKET CONTROL CARD                          07006220 T  0000:0
                              %             1 = "PACKEND"CARD, (USED BY THE                        07006230 T  0000:0
                              %                  OPERATORS TO END A GROUP                          07006240 T  0000:0
                              %                  OF PACKETS BEING LOADED TO                        07006250 T  0000:0
                              %                  DISK)                                             07006260 T  0000:0
                              %             3 = "PACKET" CARD,(FIRST CARD                          07006270 T  0000:0
                              %                  OF A PACKET)                                      07006280 T  0000:0
                              %             5 = "END PACKETS" CARD, (USED BY                       07006290 T  0000:0
                              %                  THE OPERATORS TO BOTH END                         07006300 T  0000:0
                              %                  A GROUP OF PACKETS AND                            07006310 T  0000:0
                              %             SIMULTANEOUSLY DISCONTINUE                             07006320 T  0000:0
```

```
                              %                    LOAD CONTROL).                                                  07006330 T  0000:0
                         PLUGGED;%  TRUE IF THE LAST "PACKET" CARD(I.E.,                                         07006340 T  0000:0
STACK(F+25) = PLUGGED
                              %       PTYPE=3), WAS BOTH THE START OF A NEW                                      07006350 T  0000:0
                              %       PACKET AND WAS USED TO "PLUG" THE END                                      07006360 T  0000:0
                              %       OF THE LAST PACKET WITH AN ARTIFICIAL                                      07006370 T  0000:0
                              %       "-QUESTION MARK- PACKET." CARD;                                            07007000 T  0000:0
                    $ POP OMIT                                                                                   07007001 T  0000:0
                   BOOLEAN CDONLY;                                                                               07007100 T  0000:0
STACK(F+26) = CDONLY
                       INTEGER A,I;%                                                                             07008000 T  0000:0
STACK(F+27) = A
STACK(F+30) = I
                    $ SET OMIT = NOT(PACKETS)                                                                    07008199 T  0000:0
                       REAL CONTINUE,DISKCHAIN,ADECK; LABEL DK;                                                  07008200 T  0000:0
STACK(F+31) = CONTINUE
STACK(F+32) = DISKCHAIN
STACK(F+33) = ADECK
                    $ POP OMIT                                                                                   07008251 T  0000:0
                       LABEL AGAIN,INL,ERROR,SUPER,BOMB,SKIPIT,EXIT;                                             07009000 T  0000:0
                     LABEL INPUTL;                                                                               07009100 T  0000:0
                     BOOLEAN EBCDIC; REAL  EBTABLEADR;                                  %890-                    07009200 C  0000:0
STACK(F+34) = EBCDIC
STACK(F+35) = EBTABLEADR
                       ARRAY FPB[*],H[*];%                                                                       07010000 T  0000:0
STACK(F+36) = FPB
STACK(F+37) = H
                       SUBROUTINE STOP;%                                                                         07011000 T  0000:0
                            BEGIN IF S ≠ 18 THEN%                                                                07012000 T  0001:0
                                  BEGIN READY ← NOT(Q ← TWO(S)) AND READY;%                                      07013000 T  0001:3
                                       RRRMECH ← NOT Q AND RRRMECH OR Q AND SAVEWORD;%                           07014000 T  0004:3
                                       LABELTABLE[S] ← @114;%                                                    07015000 T  0007:1
                                       RDCTABLE[S] ← MULTITABLE[S] ← 0%                                          07016000 T  0008:2
                                  END;%                                                                          07017000 T  0009:3
                                                                                                                                07013000
                            FPB[T+1]← *P(DUP)+CLOCK+P(RTR);%                                                     07018000 T  0010:3
                            FPB[T].[24:12] ← TINU[S].[18:12];%                                                   07019000 T  0013:3
                            TINU[S].[18:12]:=0;                                                                  07020000 T  0017:0
                       END;%                                                                                     07021000 T  0019:2
                                                                                                                                07012000
$ SET OMIT = PACKETS                                                                                             07021999 T  0019:3
$ SET OMIT = NOT(PACKETS)                                                                                        07022099 T  0019:3
   SUBROUTINE FORGETONE;                                                                                         07022100 T  0019:3
$ POP OMIT                                                                                                       07022101 T  0020:0
       BEGIN T1 ← H[9]+9;%                                                                                       07023000 T  0020:0
            FOR T2 ← 10 STEP 1 UNTIL T1 DO%                                                                      07024000 T  0021:2
                 FORGETUSERDISK(H[T2],-H[8]);                                                                    07025000 T  0023:0
       END;%                                                                                                     07026000 T  0027:0
                                                                                                                                07023000
$ SET OMIT = NOT(PACKETS)                                                                                        07026099 T  0027:1
   SUBROUTINE FORGETIT;                                                                                          07026100 T  0027:1
       BEGIN FORGETONE;                                                                                          07026200 T  0028:0
       WHILE DISKCHAIN NEQ 0 DO                                                                                  07026300 T  0029:0
             BEGIN DISKWAIT(-(H .INX 0),30,DISKCHAIN);                                                           07026400 T  0030:1
                   DISKCHAIN:=H[6].[FF];                                                                         07026500 T  0032:2
             FORGETONE;                                                                                          07026600 T  0034:0
             END;                                                                                                07026700 T  0035:0
```

```
                                                                                      07026400
        END FORGETIT;                                                  07026800 T  0035:2
                                                                                      07026200
$ POP OMIT                                                             07026801 T  0035:3
   SUBROUTINE BOMBTIME;%                                               07027000 T  0035:3
        BEGIN WHILE STOPSET(P1MIX) DO STOPM(FALSE);                    07028000 T  0036:0
             IF TERMSET(P1MIX) THEN GO BOMB; END;                      07028100 T  0039:1
                                                                                      07028000
$ SET OMIT = NOT(PACKETS)                                              07028999 T  0041:2
REAL SUBROUTINE PACKETCARD;%  THIS USED TO BE "ENDCARD"                07029000 T  0041:2
        BEGIN IF Q THEN%                                               07030000 T  0042:0
        BEGIN;%                                                        07031000 T  0042:1
                       IF EBCDIC THEN                        %890-     07031200 C  0042:3
                       BEGIN                                 %890-     07031300 C  0043:0
                            EBCDIC:=FALSE;                   %890-     07031400 C  0043:2
                            M[(*P(.EBTABLE) INX NOT 1)].[2:1]:=0; %890-   07031500 C  0044:1
                       END;                                  %890-     07031600 C  0048:0
                                                                                      07031300
                 STREAM(X:="PACKETS";Y:="CONTINU",Z:="END,    ",    %890-     07032000 P  0048:0
                             EB:="DATA029",INBUFF);          %890-     07032100 C  0049:1
                            BEGIN SI + INBUFF;%                        07033000 T  0050:0
                            L:    SI + SI+1; IF SC = " " THEN GO TO L;%   07034000 T  0050:1
         INBUFF:=SI;                                         %890-     07034500 C  0051:1
             DI+LOC X; DI+DI+1;% POINT TO "PACKETS"                    07035000 T  0051:2
             IF 4SC=DC THEN% A "PACKET" OR "PACKEND" CARD              07036000 T  0052:0
             IF 2SC=DC THEN TALLY+3% A "PACKET" CARD                   07036100 T  0052:2
             ELSE TALLY+1% A "PACKEND" CARD                            07036150 T  0053:1
                  ELSE BEGIN DI+DI-4;% POINT TO "PACKETS"              07036200 T  0053:3
                       IF 7 SC=DC THEN TALLY:=5 %"END PACKET"          07036210 T  0054:1
                       ELSE BEGIN SI:=INBUFF;DI:=LOC Y;      %890-     07036220 P  0055:0
                                 DI:=DI+1;IF 7SC=DC THEN TALLY:=6      07036230 T  0055:3
                                 ELSE BEGIN DI:=LOC Z;DI:=DI+1;        07036240 T  0056:2
                                    SI:=INBUFF;              %890-     07036250 P  0057:2
                                    IF 3 SC=DC THEN TALLY:=7  %890-    07036260 P  0057:3
                                    ELSE BEGIN               %890-     07036270 P  0058:2
                                         DI:=LOC EB;DI:=DI+1;  %890-   07036280 C  0058:3
                                                  SI:=INBUFF;          07036290 C  0059:1
                                         IF 6 SC=DC THEN     %890-     07036300 C  0059:2
  $VOID                                                      %890-     07036310 C  0060:0
                                                       TALLY:=4;       07036320 C  0060:0
  $VOID 07036351                                             %890-     07036330 C  0060:1
                                 END      END  END;          %890-     07036390 C  0060:1
                                                                                      07036270
                                                                                      07036240
                                                                                      07036220
                       END;%                                           07036400 T  0060:1
                                                                                      07036200
                                X + TALLY;%                            07037000 T  0060:1
                           END;%                                       07038000 T  0060:2
                                                                                      07033000
                  END ELSE P(0);%                                      07039000 T  0060:3
                                                                                      07031000
PTYPE:=P;                                                              07039100 T  0066:1
IF PTYPE=6 THEN BEGIN PTYPE:=3; CONTINUE:=TRUE END                     07039200 T  0066:3
                                                                                      07039200
   ELSE CONTINUE:=FALSE;                                               07039300 T  0069:2
IF PTYPE=7 THEN PTYPE:=ADECK;                                          07039410 T  0070:3
```

```
  IF PTYPE = 4 THEN                                                %890-
     BEGIN PTYPE:=0; EBCDIC:=TRUE;                                 %890-
           EBTABLEADR:=SETUPEBTABLE;                               %890-
     END;                                                          %890-

PACKETCARD:=PTYPE;
        END;%

$ POP OMIT
$ SET OMIT = PACKETS
    REAL SUBROUTINE ADR;%
        BEGIN IF (T2 + H[(T1 + R DIV 200)+10]) = 0 THEN%
                  BEGIN H[9] + T1+1;%
                        H[T1+10] + T2 + GETUSERDISK(200);%
                  END;%

              ADR + R MOD 200+T2%
        END;%

    SUBROUTINE INPUT;%
        BEGIN%
              IF IU < 16 THEN%
$ SET OMIT = NOT(PACKETS)
              BEGIN
              INPUTL:  T + WAIT!0 (@120540000000 + INBUFF,
                   @6000040, IU);
                   IF T=@40 THEN GO TO INPUTL;
                   IF T≠0 THEN
                        BEGIN
                             P(DEL);
                             GO TO ERROR
                        END;

$ POP OMIT
$ SET OMIT = PACKETS
                   Q + M[INBUFF-1]=9;%
                FND%

        ELSE BEGIN WHILE(Q:=WAITIO(@40000000+INBUFF+                   %890-
                    EBCDIC×@400000001,FIRST×4+                         %890-
                    @4000000,IU)),[45:1] DO
                   IF FIRST AND CDONLY AND NOT CONTINUE THEN           %654-
                        GO EXIT ELSE                                   %654-
                   BEGIN SLEEP([TOGLE],STATUSMASK);
                        RRRMECH←RRRMECH AND NOT Q←TWO(IU);
                        READY←READY AND NOT Q;
                        SLEEP([READY],Q);
                   END;

                 IF EBCDIC THEN    EBCDICCONVERT(INBUFF,              %890-
                        EBTABLEADR,EBTABLEADR+40) ELSE                 %890-
                   IF Q + Q ≠ 0 THEN
                        BEGIN S:=(T:=UNIT[IU]),[FF];
                             RETURNIOSPACE(S);

                             UNIT[IU] + T&@77777[5:20:28];
                        END;%
```

```
07039500 C  0072:3
07039600 C  0073:2
07039700 C  0075:2
07039800 C  0076:2
                    07039600
07040000 T  0076:2
07041000 T  0077:0
                    07030000
07041001 T  0077:1
07041099 T  0077:1
07042000 T  0077:1
07043000 T  0078:0
07044000 T  0081:0
07045000 T  0083:1
07046000 T  0086:1
                    07044000
07047000 T  0086:1
07048000 T  0087:0
                    07043000
07049000 T  0088:0
07050000 T  0088:0
07051000 T  0088:0
07051099 T  0088:3
07051100 T  0088:3
07051110 T  0089:1
07051120 T  0090:1
07051130 T  0091:2
07051140 T  0092:3
07051150 T  0093:2
07051160 T  0094:0
07051170 T  0094:1
07051180 T  0094:3
                    07051150
07051181 T  0097:0
07051999 T  0097:0
07057000 T  0097:0
07058000 T  0099:2
                    07051100
07059000 P  0099:2
07059010 C  0101:0
07059100 T  0102:3
07059110 P  0105:1
07059112 C  0106:3
07059200 T  0106:3
07059300 T  0109:0
07059400 T  0111:2
07059500 T  0113:0
07060000 T  0114:2
                    07059200
07060100 C  0118:0
07060200 C  0120:3
07061000 T  0122:0
07062000 T  0123:3
07063000 T  0126:2
                    07063000
07065000 T  0129:3
07066000 T  0132:0
```

```
                    STREAM(QMK:=12:BCL:=1-FBCDIC,INBUFF);          %890-
                    BEGIN                                          %890-
                         SI:=INBUFF;                               %890-
                         BCL  (IF SC="""" THEN JUMP      OUT TO L1);
                         IF SC=@14 THEN                            %890-
                    L1: BEGIN SI:=LOC QMK;SI:=SI+7;                %890-
                         DS:=1 CHR;                                %890-
                         TALLY:=1;                                 %890-
                    SI:=INBUFF;                                    %890-
                    2(36(IF SC=">" THEN                            %890-
                         BEGIN INBUFF:=SI; DI:=INBUFF;             %890-
                         DS:=LIT "="                               %890-
                         END;                                      %890-

                         IF SC="≥" THEN                            %890-
                         BEGIN INBUFF:=SI; DI:=INBUFF;             %890-
                         DS:= LIT """"                             %890-
                         END;  SI:=SI+1;)))                        %890-

                    END;                                           %890-

                    QMK     :=TALLY;                               %890-
                    END;                                           %890-

                    Q:=P OR Q;                                     %890-
                    T ← 0;%
               END;%

          END INPUT; %                                             -

     %---------------  COM23  -------------------                  -
      %  SET UP INPUT VARIABLES%
               IF CDONLY:=(PRT[P1MIX,@25]>22) THEN
               BEGIN IU:=PRT[P1MIX,@25];
                    PRT[P1MIX,@25]:=0;         % DISK
               END ELSE

               BEGIN IF (IU:=FINDINPUT("CONTROL","DECK    ",0,0,0,0,0,0,
                         0,0)) LSS 0 THEN GO INITIATE; % BEEN DS-ED
                    IF IU GEQ 32 THEN P(XIT);          % EOJ IF PSEUDODCK
               END;

               START TIMING(0,IU);
               FPB:=PRT[P1MIX,3];
      $ SET OMIT = PACKETS
               IF NOT(JAR[P1MIX,9],[2:1]) THEN % DONT SUPPRESS MESSAGE
               FILEMESSAGE(" IN "&TINU[IU][6:30:18],0,
                         "CONTROL","DECK    ",0,0,0,OPNMESS);
               RDCTABLE[IU],[8:6] ← P1MIX;%
               IF IU LSS 16 THEN BEGIN%
                    FPB[3],[23:1]:=1; %SET INPUT FLAG FOR LOG
                    T ← WAITIO(@540000005,0,IU)%
                    END%

               ELSE IF IU=23 AND READERA NEQ 0 THEN
                    BEGIN FORGETSPACE(READERA-2);%
```

```
                                                                07062000
                                                  07066100 C  0132:0
                                                  07066200 C  0134:0
                                                  07066300 C  0134:0
                                                  07066350 C  0134:1
                                                  07066400 C  0136:0
                                                  07066500 C  0136:2
                                                  07066550 C  0137:0
                                                  07066600 C  0137:1
                                                  07066610 C  0137:2
                                                  07066620 C  0137:3
                                                  07066630 C  0138:3
                                                  07066635 C  0139:1
                                                  07066640 C  0139:3
                                                                07066630
                                                  07066650 C  0139:3
                                                  07066660 C  0140:1
                                                  07066665 C  0140:3
                                                  07066670 C  0141:1
                                                                07066660
                                                  07066700 C  0142:0
                                                                07066500
                                                  07066800 C  0142:0
                                                  07066850 C  0142:1
                                                                07066200
                                                  07066900 C  0142:2
                                                  07067000 T  0143:2
                                                  07068000 T  0144:1
                                                                07059000
                                                  07069000 P  0144:1
                                                                07050000
                                                  07069200 C  0146:0
                                                  07071000 T  0146:0
                                                  07072000 T  0146:0
                                                  07072100 T  0155:3
                                                  07072200 T  0157:3
                                                  07072300 T  0159:2
                                                                07072100
                                                  07072400 T  0159:2
                                                  07072500 T  0162:1
                                                  07072600 T  0165:0
                                                  07072700 T  0166:2
                                                                07072400
                                                  07073000 T  0166:2
                                                  07073500 T  0167:2
                                                  07073999 T  0169:0
                                                  07074090 T  0169:0
                                                  07074100 T  0170:3
                                                  07074200 T  0173:1
                                                  07075000 T  0175:2
                                                  07076000 T  0178:0
                                                  07076010 T  0179:1
                                                  07077000 T  0181:3
                                                  07077010 T  0182:3
                                                                07076000
                                                  07078000 T  0183:2
                                                  07079000 T  0189:3
```

```
                    READERA ← 0;%                                                    07080000 T  019:2
               END%                                                                  07081000 T  019:1
                                                                                                 07079000
          ELSE IF IU=24 AND READERB NEQ 0 THEN                                       07082000 T  019:1
               BEGIN FORGETSPACE(READERB-2);%                                        07083000 T  019:2
                    READERB ← 0;%                                                    07084000 T  019:1
               END;%                                                                 07085000 T  019:0
                                                                                                 07083000
  $ VOID DT                                                          %890-          07086000 P  019:0
          FIRSTCARD ← GETSPACE(10,CONTROLCARDAREAV,1)+2;%            %167-          07087000 P  019:0
%  SET UP OUTPUT VARIABLES%                                                         07088000 T  019:1
          IF PRT[P1MIX,@25] THEN%                                                  07089000 T  019:1
               BEGIN OU ← LABELASCRATCH(T ←%                                       07090000 T  020:1
                         TAPELABEL("CONTROL","DECK    ",1,1,100));%               07091000 T  020:0
                    IF OU<0 THEN GO INITIATE;    %BEEN DS-ED                     07091100 T  020:0
                    FORGETSPACE(T);%                                             07093000 T  020:3
                    FPB[3].[23:1]:=0; %SET OUTPUT FLAG FOR LOG                   07093010 T  020:2
               END%                                                              07094000 T  020:0
                                                                                                 07090000
          ELSE BEGIN OUTBUFFOLD ← OUTBUFF ←%                                     %167-  07095000 P  020:0
                         GETSPACE(60,IOBUFFERAREAV,1)+2;%                        %167-  07095100 C  021:0
                    RESERVE ← GETSPACE(30,0,1)+2;%                               07096000 T  021:3
                    H := SAVEARRAYDESC(30,DISKHEADERAREAV);                      %167-  07097000 P  021:0
                    OU ← 18;%                                                    07098000 T  022:3
                    INBUFF ← GETSPACE(21,IOBUFFERAREAV,1) + 2; %892-             07101000 C  022:2
               END;%                                                             07103000 T  022:3
                                                                                                 07095000
          START TIMING(5,OU);                                                    07104000 T  022:3
          FPB:=PRT[P1MIX,3];        % START TIMING MAY HAVE MOVED IT.            07104500 T  022:3
$ SET OMIT = NOT(PACKETS)                                                        07105499 T  022:1
        VERYFIRST←1;%                                                            07105500 T  022:1
$ POP OMIT                                                                       07105501 T  022:0
%  BEGIN ONE DECK%                                                               07106000 T  022:0
   AGAIN:    OUTBUFF ← OUTBUFFOLD;%                                              07107000 T  022:0
          L ← N ← 0;%                                                            07108000 T  022:3
$ SET OMIT = NOT(PACKETS)                                                        07108099 T  022:0
          ADECK ← 0; FIRSTORSEC ←                                    %178-       07108100 P  022:0
$ POP OMIT                                                                       07108101 T  022:3
          FIRST ← D ← 1;                                                         07109000 T  022:3
          IF OU = 18 THEN%                                                       07110000 T  023:2
               BEGIN H[ 9] ← 0;%                                                 07111000 T  023:1
                    MOVE(20,[H[9]],[H[10]]);                                     07112000 T  023:0
                    H[8]←200;                                                    07112100 T  023:6:0
          END;%                                                                  07113000 T  023:1
                                                                                                 07111000
%  BEGIN ONE CARD%                                                               07114000 T  023:1
   INL:                                                                          07115000 T  023:1
$ SET OMIT = NOT(PACKETS)                                                        07115099 T  023:1
        IF PTYPE NEQ 3 OR VERYFIRST THEN                                         07115100 T  023:1
$ POP OMIT                                                                       07115101 T  023:2
          INPUT;                                                                 07115200 T  023:2
$ SET OMIT = NOT(PACKETS)                                                        07115499 T  024:0
        IF FIRSTORSEC THEN%                                                      07115500 T  024:0
$ POP OMIT                                                                       07115501 T  024:1
          IF FIRST THEN%                                                         07116000 T  024:1
               BEGIN                                                             07117000 T  024:1:0
$ SET OMIT = NOT(PACKETS)                                                        07117099 T  024:1:2
```

```
                    PLUGGED:=VERYFIRST;                                                  07117100 T  0241:2
$ POP OMIT                                                                               07117101 T  0242:1
$ SET OMIT = PACKETS                                                                     07117199 T  0242:1
                        MOVE(10,INBUFF,FIRSTCARD);%                                      07118000 T  0242:1
$ SET OMIT = NOT(PACKETS)                                                                07118099 T  0243:3
                            IF PACKETCARD = 5 THEN                          %124-        07118500 P  0243:3
                            IF OU<16 THEN FIRST:=VERYFIRST:=0 ELSE                       07118510 T  0245:2
                            GO TO EXIT ELSE                                              07118520 T  0248:2
                            IF PTYPE≠3 OR CONTINUE THEN                                  07118550 T  0248:2
                            BEGIN                                                        07118600 T  0250:1
                            ADECK:=1; GO DK;                                             07118690 T  0250:3
                            END;                                                         07118700 T  0252:0
                                                                                                     07118600
                    END ELSE% THIS MUST BE THE SECOND CARD IN                            07119000 T  0252:0
                                                                                                     07117000
$ POP OMIT                                                                               07119001 T  0252:0
$ SET OMIT = PACKETS                                                                     07119009 T  0252:0
$ SET OMIT = NOT(PACKETS)                                                                07119099 T  0252:0
   DK:                  IF Q THEN FIRSTORSEC:=0 ELSE%BAD SEC./FIRST                      07119100 T  0252:0
                            BEGIN VERYFIRST←4;     % CARD                             07119200 T  0254:0
                                GO TO ERROR;%                                        07119300 T  0255:1
                            END;% INV DECK SET-UP                                    07119400 T  0255:3
                                                                                                     07119200
$ POP OMIT                                                                               07119401 T  0255:3
                        IF T NEQ 0 THEN                                                  07120000 T  0255:3
$ SET OMIT = NOT(PACKETS)                                                                07120009 T  0256:2
                    IF PTYPE NEQ 3 OR VERYFIRST THEN                                     07120010 T  0256:2
$ POP OMIT                                                                               07120011 T  0258:1
                        GO TO ERROR;                                                     07120020 T  0258:1
                    BOMBTIME;%                                                           07121000 T  0259:0
                    IF OU < 16 THEN % OUTPUT TO TAPE ( OU = 18 NORMALLY)      -          07122000 P  0260:0
                        BEGIN                                                            07122010 T  0260:3
$ SET OMIT = NOT(PACKETS)                                                                07122999 T  0261:1
                            PLUGGED ← VERYFIRST OR (PACKETCARD≠3)                        07123500 T  0261:1
                                OR FIRST;                                                07124000 T  0263:1
                            IF PLUGGED THEN                                              07124500 T  0264:3
$ POP OMIT                                                                               07124501 T  0265:0
                                T←WAITIO(INBUFF&@5000[18:33:15]                          07125000 T  0265:0
                                        &(10-Q)[8:38:10],0,OU);                          07125500 T  0266:1
$ SET OMIT = PACKETS                                                                     07125599 T  0269:1
$ SET OMIT = NOT(PACKETS)                                                                07125999 T  0269:1
                            IF VERYFIRST THEN VERYFIRST←PTYPE←0;                         07126000 T  0269:1
                            IF FIRST THEN FIRST←PTYPE←0;                                 07126500 T  0271:1
                            IF PTYPE=0 THEN GO TO INL;                                   07127000 T  0273:1
$ POP OMIT                                                                               07127001 T  0274:2
                            M[INBUFF-1] ← @1737000000000000;                             07127500 T  0274:2
                            T ← WAITIO(INBUFF-1,0,OU);                                   07128000 T  0276:2
   SUPER::                                                                               07129000 T  0278:3
$ SET OMIT = NOT(PACKETS)                                                                07129099 T  0278:3
                        IF PTYPE=5 THEN GO TO EXIT;                                      07129100 T  0278:3
                        IF PTYPE=1 THEN VERYFIRST:=TRUE;                                 07129200 T  0280:1
                        GO TO AGAIN;                                                     07129300 T  0282:1
$ POP OMIT                                                                               07129301 T  0285:0
$ SET OMIT = PACKETS                                                                     07129999 T  0285:0
                            END;%                                                        07139000 T  0285:0
                                                                                                     07122010
                        IF D = 0 THEN SLEEP([D],NOT 0);                                  07139500 T  0285:0
$ SET OMIT = NOT(PACKETS)                                                                07139509 T  0288:0
```

```
IF PACKETCARD NEQ 0 AND NOT(ADECK AND PTYPE=1) THEN                                    07139510 T  0288:0
      BEGIN IF NOT(PLUGGED OR FIRST) THEN%                                             07139511 T  0291:1
      BEGIN STREAM(D+OUTBUFF); BEGIN DS+27 LIT                                         07139512 T  0292:3
            "CC END...IN CASE YOU FORGOT";DS+45LIT" " END;                             07139513 T  0294:1
                                                                                                   07139512
      IF PTYPE = 3 AND NOT CONTINUE AND NOT ADECK THEN              %124-              07139520 P  0304:0
      BEGIN STREAM(FIRSTCARD,T+T+SPACE(13));                                           07139530 T  0306:1
            BEGIN DS+24LIT"#NO PACKEND CARD, PKT = "; SI+FIRSTCARD;                    07139540 T  0309:3
                  DS+9 WDS; DS+LIT"+";                                                 07139550 T  0313:1
            END;                                                                       07139560 T  0314:0
                                                                                                   07139540
            SPOUT(T);                                                                  07139565 T  0314:1
      END;                                                                             07139570 T  0315:2
                                                                                                   07139530
      END ELSE MOVE(10,INBUFF,OUTBUFF);%                                               07139575 T  0315:2
                                                                                                   07139512
      END ELSE%                                                                        07139590 T  0317:2
                                                                                                   07139511
$ POP OMIT                                                                             07139591 T  0317:2
            MOVE(10,INBUFF,OUTBUFF);%                                                  07140000 T  0317:2
$ SET OMIT = NOT(PACKETS)                                                              07140099 T  0319:2
            IF VERYFIRST THEN PLUGGED+0;%                                              07140100 T  0319:2
$ POP OMIT                                                                             07140101 T  0321:0
            IF Q THEN%                                                                 07141000 T  0321:0
                  BEGIN IF L DIV 6 ≠ N DIV 6 THEN%                                     07142000 T  0321:1
                        BEGIN R + L DIV 3;%                                            07143000 T  0323:2
                              A + ADR;%                                                07144000 T  0325:1
                              DISKIO(T,1-RESERVE,30,A);%                               07145000 T  0326:2
                              SLEEP([T],IOMASK);%                                      07146000 T  0328:2
                              M[I+L MOD 3×10+9+RESERVE] + N;%                          07147000 T  0330:0
                              DISKIO(T,RESERVE-1,30,A);%                               07148000 T  0334:0
                              SLEEP([T],IOMASK);%                                      07149000 T  0336:0
                        END%                                                           07150000 T  0337:2
                                                                                                   07143000
                        ELSE M[I +(L-N)×10+9+OUTBUFF] + N;%                            07151000 T  0337:2
                        L + M[OUTBUFF+9] + N;%                                         07152000 T  0342:0
                  END;%                                                                07153000 T  0344:2
                                                                                                   07142000
            IF N = 12000 THEN%                                                         07154000 T  0344:2
                  BEGIN T + SPACE(14);%                                                07155000 T  0345:1
                        STREAM(FIRSTCARD,T);                                           07156000 T  0348:0
                              BEGIN DS + 32 LIT%                                       07157000 T  0349:0
$ SET OMIT = NOT(PACKETS)                                                              07157099 T  0349:1
                              "#MORE THAN 12000 CARDS IN PKT = ";                      07157100 T  0349:1
$ POP OMIT                                                                             07157101 T  0353:1
$ SET OMIT = PACKETS                                                                   07157999 T  0353:1
                                    SI+FIRSTCARD;DS+9WDS;DS+LIT "+";                   07159000 T  0353:1
                        END;%                                                          07160000 T  0354:1
                                                                                                   07157000
                        GO TO SKIPIT;                                                  07161000 T  0354:2
                  END;%                                                                07162000 T  0356:0
                                                                                                   07155000
            IF (N + N+1) MOD 6 = 0 THEN%                                               07163000 T  0356:0
                  BEGIN R + N DIV 3-2;%                                                07164000 T  0358:1
                        A + ADR;%                                                      07165000 T  0360:2
                        OUTBUFF + OUTBUFFOLD;%                                         07166000 T  0362:2
                        DISKIO(D,OUTBUFF-1,60,A);                                      07167000 T  0363:1
```

```
                    END ELSE OUTBUFF ← OUTBUFF+10;%                                  07169000 T  0365:1
                                                                                                 07164000
$ SET OMIT = NOT(PACKETS)                                                            07169099 T  0367:0
             IF FIRST THEN FIRST←PTYPE←0;%                                           07169100 T  0367:0
             IF VERYFIRST THEN VERYFIRST:=PTYPE:=0;                                  07169110 T  0369:0
$ POP OMIT                                                                           07169201 T  0371:0
$ SET OMIT = NOT(PACKETS)                                                            07169499 T  0371:0
              IF PTYPE=0 THEN GO INL;                                                07169500 T  0371:0
$ POP OMIT                                                                           07169501 T  0372:1
$ SET OMIT = PACKETS                                                                 07169999 T  0372:1
             IF D = 0 THEN SLEEP([D],NOT 0);                                         07171000 T  0372:1
             OUTBUFF ← OUTBUFFOLD;%                                                  07173000 T  0375:1
             R ← N DIV 6×2;%                                                         07174000 T  0376:0
             A ← ADR;%                                                               07175000 T  0377:3
             IF N MOD 6 ≠ 0 THEN                                                     07175100 T  0379:2
             BEGIN                                                                   07175200 T  0380:3
             DISKIO(T,OUTBUFF-1,60,A);%                                              07176000 T  0381:1
             SLEEP([T],IOMASK);%                                                     07177000 T  0383:1
             END;%                                                                   07178000 T  0384:3
                                                                                                 07175200
             IF R+2 < 200 THEN                                                       07178100 T  0384:3
                  BEGIN H[8] ← R+2;                                                  07178200 T  0386:0
                       FORGETUSERDISK(A+2,R-198);                                    07178300 T  0388:1
                  END;                                                               07178400 T  0390:1
                                                                                                 07178200
             H[7]←N-1;                                                               07179000 T  0390:1
             H[4]←H[6]←0;                                                            07179050 T  0392:0
             H[5]:= -0;                                                              07179100 T  0394:1
$ SET OMIT = NOT(PACKETS)                                                            07179199 T  0395:3
             H[6]←0&DISKCHAIN[CTF]&(IF IU<23 THEN 2 ELSE IU-23)                      07179200 T  0395:3
                   [2:42:6];                                                         07179202 T  0399:2
        IF CONTINUE THEN                                                             07179205 T  0401:0
             BEGIN                                                                   07179210 T  0401:1
             H[2]:=NEXTCDNUM(1);                                                     07179220 T  0401:3
             DISKCHAIN:=GETESPDISK;                                                  07179230 T  0403:2
             DISKWAIT(H INX 0,30,DISKCHAIN);                                         07179250 T  0404:2
             STREAM(A:=H[2],B:=FIRSTCARD,INBUFF);                                    07179260 T  0406:2
             BEGIN SI:=B; DS:=8 CHR;                                                 07179270 T  0408:0
             DS:=15 LIT" CONTINUES PKT#";                                            07179280 T  0408:2
             SI:=LOC A; SI:=SI+4; DS:=4 CHR; DS:=LIT":";                             07179290 T  0410:3
             END;                                                                    07179300 T  0412:0
                                                                                                 07179270
             END ELSE                                                                07179310 T  0412:1
                                                                                                 07179210
             BEGIN DISKCHAIN:=0;                                                     07179320 T  0412:1
$ POP OMIT                                                                           07179321 T  0413:2
             ENTERCONTROLDECK(H);                                                    07180000 T  0413:2
$ SET OMIT = NOT(PACKETS)                                                            07180009 T  0414:2
             END;                                                                    07180010 T  0414:2
                                                                                                 07179320
$ POP OMIT                                                                           07180011 T  0414:2
             GO TO SUPER;                                                            07181000 T  0414:2
   ERROR:    T ← SPACE(12);%                                                         07214000 T  0415:0
$ SET OMIT = NOT(PACKETS)                                                            07214099 T  0417:1
             STREAM(FIRSTCARD,X←VERYFIRST,T);%                                       07214100 T  0417:1
                  BEGIN SI←LOC X; SI←SI+7; IF SC="2" THEN                            07214110 T  0418:2
                    DS←16 LIT "#INV PKT CARD = "%                                    07214120 T  0419:2
                       ELSE IF SC="4" THEN%                                          07214130 T  0421:3
```

```
                        DS←16 LIT "#INV DECK,PKT = "%                                  07214140 T  0422:2
                    ELSE DS←16 LIT "#READ ERR,PKT = ";%                                07214150 T  0424:3
$ POP OMIT                                                                             07214151 T  0427:1
$ SET OMIT = PACKETS                                                                   07214999 T  0427:1
                    SI ← FIRSTCARD; DS ← 9 WDS; DS ← LIT "←";%                          07217000 T  0427:1
               END;%                                                                   07218000 T  0428:1
                                                                                                     07214110
    SKIPIT:    SPOUT(T);                                                               07219000 T  0428:2
               DO BEGIN INPUT;%                                                        07220000 T  0429:3
                    BOMBTIME;%                                                         07221000 T  0431:0
$ SET OMIT = PACKETS                                                                   07221999 T  0432:0
$ SET OMIT = NOT(PACKETS)                                                              07222099 T  0432:0
               END UNTIL PACKETCARD NEQ 0;                                             07222100 T  0432:0
                                                                                                     07220000
$ POP OMIT                                                                             07222101 T  0434:0
               IF OU < 16 THEN%                                                        07223000 T  0434:0
                    BEGIN DO BEGIN T ← WAITIO(@340000005,@60,OU);%                     07224000 T  0434:3
                                  BOMBTIME;%                                           07225000 T  0437:0
                         END UNTIL T.[42:1];%                                          07226000 T  0438:0
                                                                                                     07224000
                         T ← WAITIO(@140000005,@60,OU);%                               07227000 T  0439:1
                    END%                                                               07228000 T  0441:0
                                                                                                     07224000
               ELSE FORGETIT;%                                                         07229000 T  0441:0
               GO TO SUPER;%                                                           07230000 T  0445:0
    BOMBI:     IF OU=18 THEN FORGETIT;%                                    %164-      07231000 P  0445:2
    EXIT:      SLEEP([TOGLE],STATUSMASK);                                              07232000 T  0448:0
               IF IU GEQ 23 THEN UNITCODE[IU-23]:=-0;                                  07232500 T  0449:2
               S ← IU; T ← 3; STOP;%                                                   07233000 T  0452:3
               S ← OU; T ← 8; STOP;%                                                   07234000 T  0455:0
               FORGETSPACE(INBUFF);%                                                   07235000 T  0458:0
               FORGETSPACE(FIRSTCARD);%                                                07236000 T  0458:3
               IF OU > 16 THEN%                                                        07237000 T  0459:2
                    BEGIN FORGETSPACE(H);%                                             07238000 T  0460:1
                          FORGETSPACE(OUTBUFFOLD);%                                    07239000 T  0461:3
                          FORGETSPACE(RESERVE);%                                       07240000 T  0462:2
                    END;%                                                              07241000 T  0463:1
                                                                                                     07238000
END COM23;%                                                                            07242000 T  0463:1
                                                                                                     07005000
                                                                                                SIZE= 0464 WORDS
```

```
                    PROCEDURE STARTLOADN(KTR); VALUE KTR; REAL KTR;%                                    07243000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00215
PRT(561) = STARTLOADN
                        BEGIN REAL HDR,SEGO,I,F,T,C; ARRAY SHEAT[*];                                    07244000 T  0000:0
STACK(F+1) = HDR
STACK(F+2) = SEGO
STACK(F+3) = I
STACK(F+4) = F
STACK(F+5) = T
STACK(F+6) = C
STACK(F+7) = SHEAT
                            LABEL TRYAGAIN,LDCNTRL,DISK;                                                07244100 T  0000:0
                            STREAM(K+0:KTR);%                                                           07245000 T  0000:0
                                 BEGIN SI ← KTR;%                                                       07246000 T  0003:0
                                 L:   IF SC = " " THEN%                                                 07247000 T  0003:1
                                           BEGIN SI ← SI+1; GO TO L END;%                               07248000 T  0003:3
                                                                                                                    07248000
                                      DI ← LOC K; DI ← DI+6; DS ← 2 CHR;%                               07249000 T  0004:1
                                 END;%                                                                  07250000 T  0005:0
                                                                                                                    07246000
                            C ← P;%                                                                     07251000 T  0005:1
                            T ← KTR.[15:15]-1;%                                                         07252000 T  0005:3
                            IF (C NEQ "MT" AND C NEQ "DK") OR                                           07253000 T  0007:2
                               (C  =  "DK" AND CDONLY     ) THEN                                        07253100 T  0009:1
                                 SPOUT(T INX M[T-1])                                                    07254000 T  0011:1
                            ELSE BEGIN C ← C = "MT";%                                                   07255000 T  0011:1
                                                                                                        07255100 T  0019:1
                    TRYAGAIN:
                        IF (HDR:=DIRECTORYSEARCH(P(LDCNTRL),P(DISK),3)) ≠ 0 THEN                        07256000 T  0019:1
                            BEGIN                                                                       07256200 T  0021:2
                            SHEAT := [M[F:=TYPEDSPACE(31,SHEETAREAV)]] & 30[8:38:10];%                  07256400 P  0022:0
                            STREAM(S:=F-1, D:=F); % ZERO OUT THE SHEAT ENTRY                             07256600 T  0026:1
                               BEGIN                                                                    07256800 T  0027:3
                               SI:=S; DS:=30 WDS;                                                       07257000 T  0027:3
                               END;                                                                     07257200 T  0028:1
                                                                                                                    07256800
                            SEGO := TYPEDSPACE(30,SEGZEROAREAV);%                          %167-        07257400 P  0028:2
                            DISKWAIT(-SEGO, 30, M[HDR INX 10]);                                         07257600 T  0030:3
                            F.[FF] := HDR; % CORE ADDRESS OF HEADER IN [FF] OF PARAM.                   07257800 T  0033:2
                            SHEAT[7] := SEGO;  % CORE ADRS.OF SEGMENT ZERO IN SHEAT[7]                  07258000 T  0034:3
                            SHEAT[0] := P(LDCNTRL);                                                     07258200 T  0036:0
                            SHEAT[1] := P(DISK);                                                        07258400 T  0037:1
                            SHEAT[2] := 0 & LDCNTRLCODE[5:45:3] & 2[8:38:10];                           07258600 T  0038:2
                            % [4:1] IN SHEET[2] MEANS SUPRESS BOJ/EOJ MESSAGES                          07258800 T  0041:3
                            SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS                     07259000 T  0041:3
                            SHEAT[19] := C;              % COMMON VALUE                               07259200 T  0044:0
                            SHEAT[20] := 4;              % CORE ESTIMATE                              07259400 T  0045:1
                            SHEAT[21] := 150;            % STACK SIZE                                 07259600 T  0046:2
                                                                                                        07259800 T  0047:3
                            STREAM(A:=0 : S := P(.SCHEDULEIDS));                                        07260000 T  0047:3
                                BEGIN                                                                   07260200 T  0049:0
                                SI:=S;                                                                  07260400 T  0049:0
                                47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                                    07260600 T  0049:1
                                   IF SB THEN ELSE JUMP OUT);                                           07260800 T  0050:1
                                DS:=SET; A:=TALLY;                                                      07261000 T  0051:3
                                END STREAM STATEMENT;                                                   07261200 T  0052:1
                                                                                                                    07260200
                                                                                                        07261400 T  0052:2
```

```
                I := P;                                                                 07261600 T  0052:2
                SHEAT[3].[8:10] := I;       % SCHEDULE NUMBER                        07261800 T  0053:0
                SHEAT[23] := (CLOCK + P(RTR)) DIV 60;                                   07262000 T  0055:2
                SHEAT[24] := MCP;                                          %131-        07262100 C  0057:3
                SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER                    07262200 T  0059:3
                STREAM(C, T);                                                           07262400 T  0061:2
                   BEGIN                                                                07262600 T  0062:2
                   DI:=DI+16;                                                           07262800 T  0062:2
                   DS:=31LIT"CC EXECUTE LDCNTRL/DISK;COMMON=";                          07263000 T  0062:3
                   S1:=LOC C; DS:=8DEC;                                                 07263200 T  0067:0
                   DS:=6LIT";END.←";                                                    07263400 T  0067:2
                   END STREAM STATEMENT;                                                07263600 T  0068:2
                                                                                                    07262600
                M[T] := 0; M[T+1] := 10;                                                07263700 T  0068:3
                SHEAT[6] := GETFSPDISK & 10[18:33:15];                                  07263800 T  0072:1
                DISKWAIT(T, 11, SHEAT[6].[CF]);                                         07264000 T  0074:1
                FORGETSPACE(T);                                                         07264200 T  0076:1
                INDEPENDENTRUNNER(P(.SELECTRUN),F,160);                                 07264400 T  0077:0
                END ELSE % IF IN DIRECTORY                                              07265000 T  0078:1
                                                                                                    07256200
                BEGIN                                                                   07265100 T  0078:1
                ENTERSYSFILE(2);                                                        07265200 T  0081:0
                GO TRYAGAIN;                                                            07265300 T  0081:3
LDCNTRL:::      "LDCNTRL";                                                              07265400 T  0082:1
   DISK:::      "DISK   ";                                                              07265500 T  0084:0
                END;                                                                    07265600 T  0085:0
                                                                                                    07265100
                     END;%                                                              07266000 T  0085:0
                                                                                                    07255000
           END;%                                                                        07267000 T  0085:0
                                                                                                    07255000
END;%                                                                          07267000 T  0085:0
                                                                                                    07244000
                                                                                      SIZE= 0086 WORDS
```

```
                PROCEDURE TABLEOFCONTENTS(B,COUNT);%                                    07268000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00218
PRT(562) = TABLEOFCONTENTS
                    VALUE B,COUNT; REAL B,COUNT;%                                       07268100 T  0000:0
                        BEGIN REAL I,T,N,A,TUSTA,TU,BU;                                 07269000 T  0000:0
STACK(F+1) = I
STACK(F+2) = T
STACK(F+3) = N
STACK(F+4) = A
STACK(F+5) = TUSTA
STACK(F+6) = TU
STACK(F+7) = BU
                $ SET OMIT = NOT(PACKETS)                                               07269099 T  0000:0
                                REAL FIRST,START,FINAL,PKTCT;%                          07269100 T  0000:0
STACK(F+10) = FIRST
STACK(F+11) = START
STACK(F+12) = FINAL
STACK(F+13) = PKTCT
                $ POP OMIT                                                              07269101 T  0000:0
                        LABEL L,EXIT,G;%                                                07270000 T  0000:0
                $ SET OMIT = NOT(SHAREDISK)                                             07270099 T  0000:0
                        A:=B.[15:15]-1;                                                 07271900 T  0000:0
                        TUSTA:=M[A^1];                                                  07272000 T  0004:2
                        LOCKCONTROLDECKS;                                               07272500 T  0006:2
                                                                                                    07272500
                                                                                                    07272500
                        A:=FIRSTDECK;                                                   07273000 T  0011:2
                $ SET OMIT = NOT(PACKETS)                                               07273099 T  0012:1
                                FIRST+1;%                                               07273100 T  0012:1
                $ POP OMIT                                                              07273101 T  0013:0
                    L:  I:=SPACE(14) INX TUSTA;                                         07274000 T  0013:0
                    G:  IF A = 0 THEN GO TO EXIT;%                                      07275000 T  0015:3
                        DISKWAIT(^I,12,A);                                              07276000 T  0017:0
                        A:=M[I+6].[CF];                                                 07278000 T  0018:2
$ SET OMIT = NOT(DATACOM AND RJE )                                                      07278499 T  0021:0
$ SET OMIT = NOT(SHAREDISK)                                                             07279000 T  0021:0
                        N ← M[I+2];%                                                    07281000 T  0021:0
$ SET OMIT = NOT(PACKETS)                                                               07281099 T  0023:0
                            IF NOT COUNT THEN%                                          07281100 T  0023:0
                          BEGIN%                                                        07281200 T  0023:2
$ POP OMIT                                                                              07281201 T  0024:0
                            DISKWAIT(^I^4,9,M[I+10]);                                   07282000 T  0024:0
                        STREAM(N,T,TU,BU,I);                                            07284000 T  0027:1
                            BEGIN SI ← LOC N; SI ← SI+1;%                               07285000 T  0029:0
$ SET OMIT = NOT(PACKETS)                                                               07285099 T  0029:2
                                    DS:=8 LIT " PACKET ";DS:=5 CHR;                     07285100 T  0029:2
$ POP OMIT                                                                              07285111 T  0031:0
$ SET OMIT = PACKETS                                                                    07285999 T  0031:0
$ SET OMIT = NOT(SHAREDISK)                                                             07286100 T  0031:0
$ SET OMIT = SHAREDISK                                                                  07286400 T  0031:0
                            DS:=8 LIT" ";                                               07286500 T  0031:0
$ POP OMIT                                                                              07286501 T  0032:1
$ SET OMIT = NOT(PACKETS)                                                               07286509 T  0032:1
                              DS:=3 LIT " =";                                           07286510 T  0032:1
$ POP OMIT                                                                              07286511 T  0033:0
$ SET OMIT = NOT(RJE AND DATACOM )                                                      07286599 T  0033:0
                        DS:=8 LIT " ";                                                  07286800 T  0033:0
```

```
        NEX:
$ SET OMIT = PACKETS                                                    07286900 T  0034:1
$ SET OMIT = NOT(PACKETS)                                               07286999 T  0034:1
                    DI:=DI+40;DI:=DI+19;DS:=LIT"←";                     07288099 T  0034:1
$ POP OMIT                                                              07288100 T  0034:1
                END;%                                                   07288101 T  0035:1
                                                                        07289000 T  0035:1
                                                                                    07285000
                SPOUT(I);%                                              07290000 T  0035:2
$ SET OMIT = NOT(PACKETS)                                               07290099 T  0036:3
                END ELSE%                                               07290100 T  0036:3
                                                                                    07281200
                  BEGIN% OPERATOR WANTS A COUNT                         07290200 T  0036:3
                    IF FIRST THEN BEGIN% STORE FIRST DECK #,            07290300 T  0039:0
                                    FIRST←0;  START←N;%                 07290400 T  0039:3
                                  END;%                                 07290500 T  0041:1
                                                                                    07290300
                    PKTCT←PKTCT+1; FINAL←N;%                            07290600 T  0041:1
                    FORGETSPACE(I);%                                    07290650 T  0043:1
                  END;%                                                 07290700 T  0044:0
                                                                                    07290200
$ POP OMIT                                                              07290701 T  0044:0
                GO TO L;%                                               07291000 T  0044:0
          EXIT:IF N=0 THEN                                              07292000 T  0044:2
                  BEGIN STREAM(I);                                      07293000 T  0045:1
$ SET OMIT = NOT(PACKETS)                                               07293099 T  0046:2
                    DS:=20 LIT " NO PACKETS ON DISK←";                  07293100 T  0046:2
$ POP OMIT                                                              07293101 T  0049:2
$ SET OMIT = PACKETS                                                    07293199 T  0049:2
                    SPOUT(I);%                                          07294000 T  0049:2
$ SET OMIT = PACKETS                                                    07294899 T  0050:3
$ SET OMIT = NOT(PACKETS)                                               07294999 T  0050:3
                  END ELSE% CHECK FOR COUNT REQUEST,                    07295000 T  0050:3
                                                                                    07293000
                  IF COUNT THEN%                                        07295010 T  0050:3
                    BEGIN;STREAM(C←PKTCT,S←START,%                      07295020 T  0051:2
                          F←FINAL,T1←0,T2←0,I);%                        07295030 T  0052:3
                      BEGIN DS←LIT " "; T2←DI;%                         07295040 T  0054:0
                            SI←LOC C; DI←LOC T1;%                       07295050 T  0054:3
                            DS←2 DEC; SI←LOC T1; DI←T2;                 07295060 T  0055:1
                            DS←2 CHR; T2←DI; DI←DI-2;%                  07295070 T  0056:0
                            DS←FILL; DI←T2;%                            07295080 T  0056:3
                            DS←7 LIT " PACKET";%                        07295090 T  0057:1
                            SI←LOC T1;                          %511-   07295100 P  0058:2
                            IF SC≠"0" THEN GO TO AQ             %511-   07295102 C  0058:3
                                      ELSE SI←SI+1;             %511-   07295104 C  0059:2
                            IF SC="1" THEN% ONLY 1 DECK                 07295110 T  0060:0
                              BEGIN DS←2LIT ", ";%                      07295120 T  0060:2
                                SI←LOC F; SI←SI+1;%                     07295130 T  0061:0
                                DS←5 CHR;%                              07295140 T  0061:2
                              END ELSE% MORE THAN 1                     07295150 T  0061:3
                                                                                    07295120
                       AQ:    BEGIN DS←3 LIT "S, ";            %511-   07295160 P  0062:0
                                SI←LOC S; SI←SI+1;%                     07295170 T  0062:3
                                DS←5 CHR;%                              07295180 T  0063:1
                                DS←6 LIT " THRU ";%                     07295190 T  0063:2
                                SI←SI+4; DS←4 CHR;%                     07295200 T  0064:2
                              END;%                                     07295210 T  0065:0
```

```
                                        DS←LIT "←";%                    07295160
                                    END;%                       07295220 T  0065:0
                                                                07295230 T  0065:2
                                                                            07295040
                                   SPOUT(I);%                   07295235 T  0065:3
                                  END ELSE FORGETSPACE(I);%     07295240 T  0067:0
                                                                            07295020
          $ POP OMIT                                            07295241 T  0068:1
                         UNLOCKCONTROLDECKS;                    07296000 T  0068:1
                                                                            07296000
                                                                            07296000
                  END;%                                         07297000 T  0071:3
                                                                            07269000
                                                                   SIZE= 0073 WORDS
```

```
                    PROCEDURE REMOVEDECK(N,TUSTA);VALUE N,TUSTA;REAL N,TUSTA;                                07298000 T  000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00221
PRT(563) = REMOVEDECK
                        BEGIN REAL I,T,A,L1,J=I,L2,V;%                                                       07299000 T  000:0
STACK(F+1) = I
STACK(F+2) = T
STACK(F+3) = A
STACK(F+4) = L1
STACK(F+1) = J
STACK(F+5) = L2
STACK(F+6) = V
                    $ SET OMIT = NOT(PACKETS)                                                                07299499 T  000:0
                        REAL L3;                                                                             07299500 T  000:0
STACK(F+7) = L3
                        LABEL FAIL,CONTINUE;                                                                 07299600 T  000:0
                    $ POP OMIT                                                                               07299601 T  000:0
                        LABEL L,EXIT,REMOVE;%                                                                07300000 T  000:0
                        LOCKCONTROLDECKS;                                                                    07301000 T  000:0
                                                                                                                         07301000
                                                                                                                         07301000
                        IF (I ← DIRECTORYSEARCH("DECK    ",N,5)) = 0 THEN%                                   07303000 T  000:3
                    $ SET OMIT = NOT(PACKETS)                                                                07303499 T  000:0
                       FAIL:                                                                                 07303500 T  000:0
                    $ POP OMIT                                                                               07303501 T  000:2
                            BEGIN I ← SPACE(5);%                                                             07304000 T  000:2
                              STREAM(N,I);%                                                                  07305000 T  001:3
                    $ SET OMIT = NOT(PACKETS)                                                                07305099 T  001:3
                                BEGIN DS:=5 LIT " PKT ";                                                     07305100 T  001:3
                    $ POP OMIT                                                                               07305101 T  001:3
                    $ SET OMIT = PACKETS                                                                     07305999 T  001:3
                                                  SI ← LOC N; SI ← SI+1; DS ← 5 CHR;%                        07307000 T  001:3
                                                  DS ← 13 LIT " NOT ON DISK←";%                              07308000 T  001:2
                                BEGIN                                                                        07309000 T  001:2
                                                                                                                         07305100
                                    GO TO EXIT;%                                                             07310000 T  001:3
                                END;%                                                                        07311000 T  002:0
                                                                                                                         07304000
                    $ SET OMIT = NOT(SHAREDISK)                                                              07311199 T  002:0
                    $ SET OMIT = NOT(PACKETS)                                                                07311499 T  002:0
                        L3:=M[I+6].[FF];                                                                     07311500 T  002:0
                    $ POP OMIT                                                                               07311501 T  002:2
                        L2:=M[I+6].[CF];                                                                     07312000 T  002:2
                        IF (A:=FIRSTDECK)=(L1:=I.[FF]) THEN                                                  07313000 T  002:0
                        BEGIN                                                                                07314000 T  002:1
                    $ SET OMIT = PACKETS                                                                     07314099 T  002:3
                    $ SET OMIT = NOT(PACKETS)                                                                07314109 T  002:3
                            FIRSTDECK:=IF L3 NEQ 0 THEN L3 ELSE L2;                                          07314110 T  002:3
                            IF L2=0 THEN LASTDECK←IF L3 NEQ 0 THEN L3 ELSE 0;                                07314120 T  003:2
                    $ POP OMIT                                                                               07314121 T  003:2
                            DISKWAIT(KLUMP,3,DIRECTORYTOP+3);                                                07314200 T  003:2
                    $ SET OMIT = NOT(PACKETS)                                                                07314289 T  003:1
                            IF L3 NEQ 0 THEN GO TO CONTINUE ELSE                                             07314290 T  003:1
                    $ POP OMIT                                                                               07314291 T  003:0
                            GO TO REMOVE;                                                                    07314300 T  003:0
                        END;                                                                                 07314400 T  003:0
                                                                                                                         07314000
                        J ← I.[33:15];%                                                                      07315000 T  003:0
```

```
        L:
                DISKWAIT(-J,30,A);                                                  07316000 T  0039:1
                IF (V:=M[J+6].[CF])=0 THEN                                          07317000 T  0039:1
$ SET OMIT = NOT(PACKETS)                                                           07318000 T  0040:3
                IF A=L1 THEN GO REMOVE ELSE BEGIN FORGETSPACE(I); GO FAIL           07318009 T  0043:3
                                              END;                                  07318010 T  0043:3
                                                                                    07318012 T  0046:3
                                                                                                07318010
$ POP OMIT                                                                          07318013 T  0046:3
$ SET OMIT = PACKETS                                                                07318019 T  0046:3
                IF V ≠ L1 THEN%                                                     07319000 T  0046:3
                     BEGIN A ← V; GO TO L END;%                                     07320000 T  0047:2
                                                                                                07320000
$ SET OMIT = PACKETS                                                                07320999 T  0049:1
$ SET OMIT = NOT(PACKETS)                                                           07321099 T  0049:1
                M[J+6].[CF]←IF L3≠0 THEN L3 ELSE L2;                                07321100 T  0049:1
$ POP OMIT                                                                          07321101 T  0054:0
                DISKWAIT(J,30,A);                                                   07322000 T  0054:0
                IF L2 = 0 THEN%                                                     07324000 T  0055:1
                BEGIN                                                               07325000 T  0056:0
$ SET OMIT = PACKETS                                                                07325999 T  0056:2
$ SET OMIT = NOT(PACKETS)                                                           07326099 T  0056:2
                     LASTDECK:=IF L3 NEQ 0 THEN L3 ELSE A;                          07326100 T  0056:2
$ POP OMIT                                                                          07326101 T  0059:1
                     DISKWAIT(KLUMP,3,DIRECTORYTOP+3);                              07327000 T  0059:1
$ SET OMIT = PACKETS                                                                07327999 T  0061:0
$ SET OMIT = NOT(PACKETS)                                                           07329999 T  0061:0
                 END ELSE IF L3=0 THEN ELSE                                         07330000 T  0061:0
                                                                                                07325000
        CONTINUE:                                                                   07330050 T  0062:3
                BEGIN J←I INX 0;                                                    07330100 T  0063:1
                DISKWAIT(-J,30,L3);                                                 07330200 T  0064:2
                M[J+6].[CF]←L2;                                                     07330300 T  0066:0
                DISKWAIT(J,30,L3);                                                  07330400 T  0068:3
                END;                                                                07330500 T  0070:0
                                                                                                07330100
 $ POP OMIT                                                                         07330501 T  0070:0
        REMOVE:                                                                     07331000 T  0070:0
                 FORGETSPACE(I);                                                    07332000 T  0070:0
                I:=DIRECTORYSEARCH("DECK    ",N,8).[CF];                            07333000 T  0070:3
                T ← M[I+9];%                                                        07343000 T  0073:0
                FOR V ← 1 STEP 1 UNTIL T DO%                                        07344000 T  0075:0
                     IF M[I+V+9]≠0 THEN FORGETUSERDISK(M[I+V+9],M[I+8]);            07345000 T  0077:0
                STREAM(N,I);%                                                       07346000 T  0086:1
 $ SET OMIT = NOT(PACKETS)                                                          07346099 T  0087:1
                BEGIN DS:=5 LIT " PKT ";                                            07346100 T  0087:1
 $ POP OMIT                                                                         07346101 T  0088:1
 $ SET OMIT = PACKETS                                                               07346999 T  0088:1
                          SI ← LOC N; SI ← SI+1; DS ← 5 CHR;%                       07348000 T  0088:1
                          DS ← 9 LIT " REMOVED←";%                                  07349000 T  0089:0
                     END;%                                                          07350000 T  0090:2
                                                                                                07346100
 $ SET OMIT = PACKETS                                                               07350099 T  0090:3
EXIT:           SPOUTER(I&TUSTA[9:9:9],TUSTA,LIBMSG)                                07351000 T  0090:3
 $ SET OMIT = PACKETS                                                               07351099 T  0092:2
                ;UNLOCKCONTROLDECKS;                                                07352000 T  0092:2
                                                                                                07352000
                                                                                                07352000
        END;%                                                                       07353000 T  0097:0
```

SIZE= 0099 WORDS
07299000

```
                    PROCEDURE DECKREMOVER(B); VALUE B; REAL B;%                                  07354000 T  0001:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00225
PRT(564) = DECKREMOVER
                         BEGIN REAL K,N,F;%                                                      07355000 T  0001:0

STACK(F+1) = K
STACK(F+2) = N
STACK(F+3) = F

                              INTEGER U; LABEL ON,ERR;                                           07355100 T  0001:0
STACK(F+4) = U

                              REAL D;                                                            07355200 T  0001:0
STACK(F+5) = D

                              LABEL L,TRYIT,GIVEUP;                                              07356000 T  0001:0
                              K ← B.[15:15]=1;%                                                  07357000 T  0001:0
                         L:   STREAM(X←12,B:A←0);%                                               07358000 T  0003:0
                                   BEGIN SI ← B;%                                                07359000 T  0004:2
                                   U:   IF SC = " " THEN BEGIN SI←SI+1; GO TO U END;%            07360000 T  0004:3
                                                                                                            07360000
                                        IF SC="=" THEN BEGIN DI←LOC X; DI←DI+6; DS←CHR;          07360100 T  0005:3
                                                             SI←SI-1; B←SI; GO TO E END;         07360200 T  0007:0
                                                                                                            07360100
                                        IF SC = "#" THEN SI:=SI+1;                               07361000 T  0007:3
                                   BL:  IF SC=" "  THEN BEGIN SI:=SI+1;GO TO BL; END;           07361500 T  0008:2
                                                                                                            07361500
                                        DI:=LOC X; DI:=DI+1; DS:=5 LIT "#0000";                  07362000 T  0009:2
                                        4(IF SC < "0" THEN JUMP OUT TO EN;                       07363000 T  0011:0
                                          IF SC > "9" THEN JUMP OUT TO EN;                       07364000 T  0012:1
                                          SI:=SI+1; TALLY:=TALLY+1);                             07365000 T  0013:1
                                   EN:  A:=TALLY; SI:=SI-A; DI:=DI-A; DS:=A CHR;                 07365500 T  0014:0
                                   N:   IF SC = " " THEN BEGIN SI←SI+1; GO TO N END;%            07366000 T  0015:3
                                                                                                            07366000
                                        DS ← CHR; B ← SI;%                                       07367000 T  0016:3
                                   E: END;%                                                      07368000 T  0017:1
                                                                                                            07359000
                              P(,B,←,,N,←);%                                                     07369000 T  0017:2
                              F←N.[36:6]; N.[36:6]←"←";                                          07370000 T  0018:2
                              IF F="←" OR F="," OR F="=" THEN                                    07371000 T  0021:2
                                   BEGIN IF F="=" THEN                                           07371100 T  0024:1
                                         BEGIN IF D=0 THEN D←SPACE(30);                          07371200 T  0025:2
                                               LOCKCONTROLDECKS;                                 07371300 T  0029:2
                                                                                                            07371300
                                                                                                            07371300
                                               IF (N:=FIRSTDECK)=0 THEN                          07371400 T  0034:2
GIVEUP:                                                                                          07371450 T  0035:3
                                               BEGIN F:="←";                                     07371500 T  0036:1
                                                     UNLOCKCONTROLDECKS;                         07371600 T  0037:0
                                                                                                            07371600
                                                                                                            07371600
                                                     GO ON;                                      07371700 T  0040:2
                                               END;                                              07371750 T  0042:0
                                                                                                            07371500
TRYIT:                                         DISKWAIT(-D,30,N);                                07371800 T  0042:0
 $ SET OMIT = NOT(SHAREDISK)                                                                     07371809 T  0043:2
                                               N:=M[D+2];                                        07371900 T  0043:2
                                               UNLOCKCONTROLDECKS;                               07371950 T  0045:2
                                                                                                            07371950
                                                                                                            07371950
                                         END;                                                    07372000 T  0049:0
```

```
                                                                                                07371200
                        FOR U ← 0 STEP 1 UNTIL PSEUDOMAX DO                                     07372090 T  0049:0
                        IF C!DROW[U]≠0 THEN                                                     07372100 T  0051:0
                        IF(C!DTABLE[U,2] EQV N)=NOT 0 THEN                                      07372200 T  0052:0
                        IF LABELTABLE[U+32]≥0                                                   07372300 T  0054:3
$ SET OMIT = NOT(PACKETS)                                                                       07372309 T  0056:1
                         AND LABELTABLE[U+32]≠@214 AND                                          07372310 T  0056:1
                         PACKETACT[U]=0                                                         07372320 T  0058:2
$ POP OMIT                                                                                      07372321 T  0059:2
                        THEN                                                                    07372330 T  0059:2
                        BEGIN                                                                   07372400 T  0060:1
                              ENDOFDECK(U,M[K-1]);                                              07372500 T  0060:3
                             GO ON;                                                             07372600 T  0063:0
                        END ELSE GO TO ERR;                                                     07372700 T  0063:2
                                                                                                07372400
                             REMOVEDECK(N,M[K-1]);                                              07372800 T  0065:3
              ON:       IF F≠"←" THEN GO TO L;                                                  07372900 T  0068:0
                       FORGETSPACE(K);%                                                         07373000 T  0069:1
                   END ELSE                                                                     07374000 T  0070:0
                                                                                                07371100
   ERR;            SPOUT(K INX M[K-1]);                                                         07374100 T  0070:0
              IF D≠0 THEN FORGETSPACE(D);                                                       07374200 T  0073:2
         END;%                                                                                  07375000 T  0075:2
                                                                                                07355000
                                                                                              SIZE= 0076 WORDS
```

```
                    BOOLEAN PROCEDURE READEMFROMDISK(H,IB);%                                                07376000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00228
                            VALUE H,IB; ARRAY H[*],IB[*];%                                        07377000 T  0000:0
                            BEGIN%                                                                07378000 T  0000:0
                    %    H[0] = ADDRESS OF BU+1 (B)%                                              07379000 T  0000:0
                    %    H[1] = ADDRESS OF B2+1%                                                  07380000 T  0000:0
                    %    H[2] = DECK NAME%                                                        07381000 T  0000:0
                    %    H[3] = RECORDCOUNT (N)%                                                  07382000 T  0000:0
                    %    H[4] = NEXT CONTROL CARD (L)%                                            07383000 T  0000:0
                    %    H[5] = RECORDS USED IN THIS BLOCK x 10 (R)%                              07384000 T  0000:0
                    %    H[7] = H[30] ARE FILE HEADER%                                            07385000 T  0000:0
                                REAL A,B;%                                                        07386000 T  0000:0
STACK(F+2) = A
STACK(F+3) = B
                                DEFINE N=H[3]#,L=H[4]#,R=H[5]#;%                                  07387000 T  0000:0
                                INTEGER I=A; DEFINE MOM=CIDROW[M[B]]#;                            07388000 T  0000:0
STACK(F+2) = I
                    $ SET OMIT = NOT(BREAKOUT)                                                    07388010 T  0000:0
                                B ← H[0];%                                                        07389000 T  0000:0
                                IF R = 0 THEN%                                                    07390000 T  0001:3
                                IF (M[B-2] AND IOMASK) = 0 THEN%                                  07391000 T  0002:3
                                    SLEEP([M[B-2]],IOMASK);%                                      07392000 T  0005:3
                                STREAM(B←B+R,IB);%                                                07393000 T  0008:3
                                    BEGIN SI ← B; DS ← 10 WDS END;%                               07394000 T  0010:3
                                                                                                                      07394000
                                M[IB INX NOT 0] ← 10;                                             07394500 T  0011:2
                                IF (READEMFROMDISK ← N=L) THEN%                                   07395000 T  0014:0
                                    L ← IB[9];%                                                   07396000 T  0015:3
                                IF (A:=N:=*P(DUP)+1) > (H[7]+1) THEN                  %639-       07397000 P  0017:3
                                    BEGIN READEMFROMDISK:=1;                                      07398000 T  0021:2
                                        STREAM(IB);                                               07398100 T  0022:3
                                        BEGIN                                                     07398200 T  0023:3
                    $ SET OMIT = NOT(PACKETS)                                                     07398299 T  0023:3
                                            DS:=8LIT" "; SI:=IB; DS:=8 WDS; DI:=IB;               07398300 T  0023:3
                    $ POP OMIT                                                                    07398301 T  0025:3
                                            DS:=5LIT"=END,"; DI:=DI-5; DS:=RESET;                 07398400 T  0025:3
                                        END;                                                      07398500 T  0027:1
                                                                                                                      07398200
                                    END                                                           07398600 T  0027:2
                                                                                                                      07398000
                                ELSE BEGIN IF (R ← *P(DUP)+10) = 30 THEN%                         07399000 T  0027:2
                                        BEGIN IB ← [M[B-2]];%                                     07400000 T  0030:2
                                            R ← 0;                                                07400400 T  0032:3
                                            A ← A DIV 3+1;                                        07400500 T  0034:0
                                            I←H[A DIV H[8]+10]+A MOD H[8];                        07401000 T  0035:3
                                            IF I>0 THEN % NEXT BUFF EXISTS            %639-       07401900 C  0039:1
                                            DISKIO(IB,1=B,30,I);%                                 07402000 T  0040:0
                                            H[0] ← H[1];%                                         07403000 T  0042:3
                                            H[1] ← B;%                                            07404000 T  0044:1
                        END;        END;        END;%                                             07405000 T  0045:2
                                                                                                                      07400000
                                                                                                                      07399000
                                                                                                                      07378000
                                                                                                                SIZE= 0046 WORDS
```

```
                BOOLEAN PROCEDURE PRINTORPUNCHWAIT(Q,PNCH);VALUE Q,PNCH;REAL Q,PNCH;                07405100 T  0000:0
                                                                                                   START OF REL SEGMENT; DISK ADDRESS = 00230
PRT(565) = PRINTORPUNCHWAIT
                FORWARD;
                PROCEDURE ENDOFDECK(R,TUSTA);VALUE R,TUSTA; REAL R,TUSTA;                          07405110 T  0000:0
                                                                                                   07406000 T  0000:0
                                                                                                   START OF REL SEGMENT; DISK ADDRESS = 00230
                        BEGIN ARRAY H[*];%                                                         07407000 T  0000:0
STACK(F+1) = H
                        REAL B,I;%                                                                 07408000 T  0000:0
STACK(F+2) = B
STACK(F+3) = I
                $ SET OMIT = NOT(PACKETS)                                                          07408099 T  0000:0
                        REAL DISKAD,PBREC,T,USERID; %                          %750-               07408100 P  0000:0
STACK(F+4) = DISKAD
STACK(F+5) = PBREC
STACK(F+6) = T
STACK(F+7) = USERID
                $ POP OMIT                                                                         07408101 T  0000:0
                        LABEL EXIT;                                                                07408500 T  0000:0
                        IF (H:=CIDROW[R])=0 THEN GO TO EXIT;                                       07409000 T  0000:0
                        LABELTABLE[R+32] ← @114;                                                   07409100 T  0003:3
                        MULTITABLE[R+32] ← RDCTABLE[R+32] ← 0;                                     07409200 T  0005:2
                        USERID←UNITCODE[R+9]; %                                %750-               07409250 C  0008:3
                        UNITCODE[R+9]:=-0;                                                         07409300 T  0010:1
                        IF NOT TUSTA.[1:1] THEN REMOVEDECK(H[2],ABS(TUSTA)) ELSE                   07410000 T  0012:1
                                P(DIRECTORYSEARCH(-"DECK   ",H[2],14),DEL);                        07410100 T  0015:1
                        FOR I ← 0 STEP 1 UNTIL 1 DO%                                               07411000 T  0017:3
                             BEGIN B ← H[I];%                                                      07412000 T  0020:0
                                IF (M[B-2] AND IOMASK) = 0 THEN                                    07413000 T  0021:0
                                    SLEEP(M[B-2],IOMASK);%                                         07414000 T  0023:2
                             END;%                                                                 07415000 T  0026:2
                                                                                                                  07412000
                        IF CIDROW[R]=0 THEN GO TO EXIT; % FIXES TIMING PROB.                       07415100 T  0028:3
                        IF H.[18:15] ≠ 0 THEN                                                      07416000 T  0030:1
                             FORGETSPACE(H.[18:15]-2);                                             07417000 T  0031:3
$ SET OMIT = NOT(PACKETS)                                                                          07417099 T  0034:1
                        IF PACKETPBD[R] GEQ 11 THEN                                                07417100 T  0034:1
                        BEGIN                                                                      07417200 T  0035:3
                             PBCOUNT := PBCOUNT+1;                                                 07417300 T  0036:1
                             I := 00; & CIDTABLE[R,6][6:6:24];                                     07417400 T  0037:2
                             IF (PBREC := DIRECTORYSEARCH("PBD    ",I,5))≠0 THEN                07417500 T  0040:0
                             BEGIN                                                                 07417600 T  0042:1
                             IF PACKETPAGE[R]>1 THEN                                               07417700 T  0042:3
                             BEGIN                                                                 07417800 T  0044:1
                                  PBREC := PBREC.[CF];                                             07417900 T  0044:3
                                  T := M[PBREC+6];                                                 07418000 T  0046:0
                                  DISKAD := M[PBREC+10]+2;                                         07418100 T  0048:0
                                  DISKWAIT(-PBREC,30,DISKAD);                                      07418200 T  0050:2
                                  IF (M[PBREC+12] EQV (-"ABORTED"))=NOT 0 THEN                     07418300 T  0052:0
                                  STREAM(B:=PBREC+11);                                             07418500 T  0055:0
                                  BEGIN                                                            07418600 T  0056:3
                                       DS:=8LIT":x0x4000"; DS:=8LIT"0PACKET ";                     07418700 P  0056:3
                                  END;                                                             07418800 T  0059:1
                                                                                                                  07418600
                                  M[PBREC+15]←M[PBREC+27]←USERID; %                %750-           07418850 C  0059:2
                                  DISKWAIT(PBREC,30,DISKAD);                                       07418900 T  0063:1
                             END;                                                                  07419000 T  0064:2
```

```
                    P(DIRECTORYSEARCH(-"PBD     ",I,14),DEL);                                    07419100 T  0064:2
                    IF AUTOPRINT OR T≠0 THEN                                                     07419200 T  0066:1
                    P(PRINTORPUNCHWAIT(I,0&T[9:39:9]),DEL);                                      07419300 T  0068:0
                    FORGETSPACE(PBREC);                                                          07419400 T  0070:3
                    END;                                                                         07419500 T  0071:2
                                                                                                                 07417600
               END;                                                                              07419600 T  0071:2
                                                                                                                 07417200
               PSEUDO[R] :=                                                                      07419700 T  0071:2
$ POP OMIT                                                                                       07419701 T  0072:0
               CIDROW[R] := 0;                                                                   07419800 T  0072:0
               IF(RUNUMBER+RUNUMBER+1)>0 THEN                                                    07420000 T  0073:3
                    STARTADECK(IF TUSTA.[1:1] THEN -H[2] ELSE 0);                                07420010 T  0075:2
               FORGETSPACE(H);                                                                   07420050 T  0079:1
          EXIT:                                                                                  07420100 T  0080:1
          END;%                                                                                  07421000 T  0080:1
                                                                                                                 07407000
                                                                                                       SIZE= 0083 WORDS
```

```
                    %          PSEUDOCOPY DECLARATION MOVED TO 02347110 TO                    %541-        07421500 P  000010
                    %          ALLOW ACCESS IN DRAINO                                         %541-        07421505 P  000010
                    PROCEDURE STARTADECK(N); VALUE N; REAL N;                                              07422000 T  000010
                                                                                          START OF REL SEGMENT; DISK ADDRESS = 00233
                            BEGIN LABEL EXIT,L,POSSIBLE,NEXT;%                                             07423000 T  000010
                                REAL I,R,T,A,S;                                                            07424000 T  000010
STACK(F+1) = I
STACK(F+2) = R
STACK(F+3) = T
STACK(F+4) = A
STACK(F+5) = S
                                REAL SDED;                                                                 07424100 T  000010
STACK(F+6) = SDED
                                ARRAY H[*];%                                                               07425000 T  000010
STACK(F+7) = H
                                LABEL AGAIN,START;                                                         07425500 T  000010
                            START:                                                                         07425600 T  000010
                                IF N.[1:1] THEN BEGIN SDED←ABS(N); N←0 END;                                07425700 T  000113
                                                                                                                       07425700
                                LOCKCONTROLDECKS;                                                          07426000 T  000413
                                                                                                                       07426000
                                                                                                                       07426000
                                IF RUNUMBER LEQ 0 AND N=0 THEN GO TO EXIT;                                 07426100 T  000913
                            AGAIN:                                                                         07427500 T  001211
                                IF PSEUDOCOPY > 2 THEN% TOO MANY COPIES CONTROLCARD                        07427600 T  001211
                            IF STARTOG AND N=0 THEN GO TO EXIT %                                           07427610 T  001310
                                    ELSE BEGIN STARTOG ← TRUE;                                             07427620 T  001511
                                            UNLOCKCONTROLDECKS;                                            07427625 T  001713
                                                                                                                       07427625
                                                                                                                       07427625
                                            COMPLEXSLEEP(PSEUDOCOPY ≤ 2);%                                 07427630 T  002111
06463300    ACCIDENTAL ENTRY AT 2
                                            STARTOG ← FALSE;%                                              07427640 T  002613
                                            GO TO START;%                                                  07427645 T  002812
                                        END;%                                                              07427650 T  003010
                                                                                                                       07427620
                                FOR R ← 0 STEP 1 UNTIL PSEUDOMAX DO                                        07428000 T  003010
                                    IF CIDROW[R] = 0 THEN GO TO POSSIBLE;%                                 07429000 T  003110
                                STREAM(S←S←SPACE(4));                                                      07429100 T  003413
                                DS:=27 LIT" ALL PSEUDO-READERS IN USE←";                                   07429200 T  003712
                                SPOUT(S);                                                                  07429300 T  004112
                                GO TO EXIT;%                                                               07430000 T  004213
                            POSSIBLE:%                                                                     07431000 T  004311
                                IF (A:=FIRSTDECK)=0 THEN GO TO EXIT;                                       07432000 T  004311
                                LABELTABLE[R+32]:=@114;                                                    07432100 T  004510
                                H←CIDROW[R]←[M[S←GETSPACE(94,20,1)+2]]&94[8:38:10];                        07433000 T  004613
                                M[S-2].[9:6] ← 0; H[2] ← 0;%                                               07434000 T  005210
                            L:  DISKWAIT(-S,30,A);                                                         07435000 T  005612
                                IF N≠0 THEN                                                                07436000 T  005810
                                BEGIN                                                                      07436100 T  005813
                                    IF H[2].[12:24]≠N THEN GO TO NEXT;                                     07436200 T  005911
                                    IF H[4].[2:1] THEN                                                     07436300 T  006111
                                    BEGIN                                                                  07436400 T  006211
                                        STREAM(A:=[H[2]],                                                  07436500 T  006213
                $ SET OMIT = NOT(SHAREDISK)
                                                                S);                                        07436520 T  006312
                $ SET OMIT = PACKETS                                                                       07436599 T  006410
```

```
$ SET OMIT = NOT(PACKETS)
                    BEGIN S:=A;S:=S+1;DS:=5 LIT" PKT ";                    07436609 T  0064:0
$ POP OMIT                                                                 07436610 T  0064:0
                         DS:=5 CHR;DS:=7LIT" IN USE";                      07436611 T  0065:2
$ SET OMIT = NOT(SHAREDISK)                                                07436700 T  0065:2
                         DS:=LIT".";                                       07436799 T  0067:0
                    END;                                                   07437000 T  0067:0
                                                                           07437100 T  0067:2
                                                                                       07436610
                         SPOUT(S);                                         07437200 T  0067:3
                         CIDROW[R]:=0;                                     07437300 T  0069:0
                         GO TO EXIT;                                       07437400 T  0070:1
               END;                                                        07437500 T  0070:3
                                                                                       07436400
          END ELSE                                                         07437600 T  0070:3
                                                                                       07436100
          IF H[4].[2:1] OR (SDED≠0 AND H[2]=SDED)                          07437800 T  0070:3
$ SET OMIT = NOT(SHAREDISK)                                                07437899 T  0073:2
               THEN GO TO NEXT;                                            07438000 T  0073:2
          H[4]:=(*P(DUP))&2[2:46:2]&SYSNO[4:46:2];                         07438100 T  0075:1
          DISKWAIT(S,30,A);                                                07438200 T  0078:3
$ SET OMIT = NOT (DATACOM AND RJE)                                         07438250 T  0080:0
          H[0] ← S+32;%                                                    07441000 T  0080:0
          H[1] ← S+64;%                                                    07442000 T  0081:3
          T ← [H[30]]; DISKIO(T,1-H[0],30,H[10]);%                         07444000 T  0083:2
          IF H[7] LSS 3 THEN H[62]:=IOMASK ELSE                            07445000 T  0087:0
          BEGIN T:=[H[62]]; IF H[8]=1 THEN                                 07445100 T  0089:3
          DISKIO(T,1-H[1],30,H[11]) ELSE                                   07445200 T  0092:1
          DISKIO(T,1-H[1],30,H[10]+1);                                     07445300 T  0095:1
          END;                                                             07445400 T  0098:3
                                                                                       07445100
          T:=GETSPACE(13,20,0)+4;                                          07446000 T  0098:3
$ SET OMIT = NOT(BREAKOUT)                                                 07446010 T  0101:0
          M[T INX 10] := H[5];                                             07446100 T  0101:0
$ SET OMIT = NOT(PACKETS)                                                  07446149 T  0103:1
          T.[24:6]←H[6].[2:6];                                             07446150 T  0103:1
$ POP OMIT                                                                 07446151 T  0105:3
          H[3] := H[4] := H[5] := H[6] := 0;                               07446200 T  0105:3
          M[T-4].[9:6] ← 0;%                                               07447000 T  0110:0
          LABELTABLE[R+32]←-@14;   %LET IT BE MOVED                        07448000 T  0113:1
          I←READEMFROMDISK(H,[M[T]]&10[8:38:10]);                          07448500 T  0115:1
          INDEPENDENTRUNNER(P(,CONTROLCARD),T&                             07449000 T  0118:2
$ SET OMIT = NOT(DATACOM AND RJE )                                         07449099 T  0119:1
                                                (R+32)[2:42:6],192);       07449200 T  0119:1
          PSEUDOCOPY ← PSEUDOCOPY + 1;%                                    07449500 T  0121:1
          IF (RUNUMBER←RUNUMBER-1) LEQ 0 OR N≠0 THEN GO TO EXIT;           07450000 T  0122:2
          GO TO AGAIN;                                                     07450200 T  0126:0
     NEXT:IF (A:=H[6].[CF])≠0 THEN GO TO L;                                07451000 T  0126:2
          IF N≠0 THEN                                                      07452000 T  0129:0
          BEGIN                                                            07452100 T  0129:3
               STREAM(N,S);                                                07452200 T  0130:1
$ SET OMIT = PACKETS                                                       07452299 T  0131:1
$ SET OMIT = NOT(PACKETS)                                                  07452309 T  0131:1
               BEGIN SI←LOC N; SI←SI+4; DS←6 LIT" PKT #";                  07452310 T  0131:1
$ POP OMIT                                                                 07452311 T  0132:3
                    DS:=4 CHR;DS:=13 LIT" NOT ON DISK←";                   07452400 T  0132:3
               END;                                                        07452500 T  0135:0
                                                                                       07452310
               SPOUT(S);                                                   07452600 T  0135:1
```

```
        END ELSE FORGETSPACE(S);                                    07452700 T  0136:2
                                                                                 07452100
        CIDROW[R] ← 0;%                                             07453000 T  0137:3
EXIT:   UNLOCKCONTROLDECKS;                                         07455000 T  0139:0
                                                                                 07455000
                                                                                 07455000
END;%                                                               07456000 T  0142:2
                                                                                 07423000
                                                                          SIZE= 0144 WORDS
```

```
                    PROCEDURE RUNTHEDECK(B);VALUE B; REAL B;%                                                    07457000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00238
PRT(566) = RUNTHEDECK
                         BEGIN REAL I,J;%                                                                        07458000 T  0000:0
STACK(F+1) = I
STACK(F+2) = J

                              STREAM(S:=0:B,A:=[1]);                                                             07461000 T  0000:0
                              BEGIN SI ← B;%          TO REAL IN I                                               07461100 T  0002:0
                              L:          IF SC=" " THEN BEGIN SI:=SI+1; GO TO L END;                            07461120 T  0002:1
                                                                                                                                07461120
                                          IF SC="#" THEN                                                         07461140 T  0003:1
                                          BEGIN                                                                  07461160 T  0003:3
                              L1:              SI:=SI+1; IF SC=" " THEN GO TO L1;                                07461180 T  0003:3
                                               DS:=8 LIT"00000000";                                              07461200 T  0004:3
                                               4(IF SC<"0" THEN JUMP OUT;                                        07461220 T  0006:0
                                                 IF SC>"9" THEN JUMP OUT;                                        07461240 T  0007:1
                                                 SI:=SI+1; TALLY:=TALLY+1);                                      07461260 T  0008:1
                                               S:=TALLY; SI:=SI-S; DI:=DI-S; DS:=S CHR;                          07461280 T  0009:0
                                               TALLY:=1;                                                         07461300 T  0010:3
                                               GO TO EX;                                                         07461320 T  0011:0
                                          DS:=4 LIT"0000";DS:=4 CHR;TALLY:=1;GO TO EX;                           07461330 T  0011:1
                                          END;                                                                   07461340 T  0012:3
                                                                                                                                07461160
                                   SI ← SI + 1;%                                                                 07461400 T  0012:3
                                   IF SC ≤ "9" THEN IF SC ≥ "0" THEN GO TO TWO;                                  07461500 T  0013:0
                                   SI ← SI - 1; DS ← OCT;%                                                       07461510 T  0014:1
                                   GO TO EX;%                                                                    07461520 T  0014:3
                              TWO: SI ← SI - 1; DS ← 2 OCT;                                                      07461530 T  0015:0
                              EX:S:=TALLY;                                                                       07461540 T  0015:2
                              END;                                                                               07461550 T  0015:3
                                                                                                                                07461100
                              J:=P;                                                                              07461560 T  0016:0
                              B:=B.[15:15]-1;                                                                    07461570 T  0016:2
                              IF J THEN                                                                          07461600 T  0018:1
                              BEGIN                                                                              07461700 T  0018:2
                                   FORGETSPACE(B);                                                               07461800 T  0019:0
                                   STARTADECK(1);                                                                07461900 T  0019:3
                              END ELSE                                                                           07462000 T  0020:2
                                                                                                                                07461700
                              BEGIN                                                                              07462100 T  0020:2
                                   IF I GTR PSEUDOMAX1 THEN  I:=NABS(RUNUMBER)  ELSE                             07462200 T  0021:0
                                   BEGIN                                                                         07462250 T  0023:1
                                   RUNUMBER:=1;                                                                  07462300 T  0023:3
                                   FOR J:=0 STEP 1 UNTIL PSEUDOMAX DO                                            07462400 T  0024:2
                                        RUNUMBER:=RUNUMBER-(CIDROW[J]≠0);                                        07462500 T  0026:0
                                   END;                                                                          07462600 T  0030:1
                                                                                                                                07462250
                                   STREAM(X1:=1-I,[1:1],X2:=RUNUMBER,[1:1],I:=ABS(I),B);                         07463000 T  0030:1
                                   BEGIN CI:=CI+X1; GO L1; DS:=10LIT" WILL USE ";GO L2;                          07464000 T  0033:1
                                         L1: CI:=CI+X2; GO L2; DS:=LIT"-"; L2:                                   07464100 T  0036:0
                                        SI:=LOC I;DS:=2 DEC;                                                     07465000 T  0037:1
                                        DS ← 13 LIT " PSEUDO-RDRS←";                                             07466000 T  0037:3
                                   END;%                                                                         07467000 T  0039:3
                                                                                                                                07464000
                                   SPOUT(B INX M[B-1]);                                                          07468100 T  0040:0
                              IF RUNUMBER GTR 0 THEN STARTADECK(0);                                              07469000 T  0043:0
                              END;                                                                               07472500 T  0045:0
```

```
END;%
                                                        07462100
07473000 T  00451:0
                                                        07458000
                                                SIZE= 0046 WORDS
```

```
                PROCEDURE EXTERNALEND(B); VALUE B; REAL B;                                                    07473100 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00240
PRT(567) = EXTERNALEND
                    BEGIN REAL U;  LABEL EXIT;                                                                07474000 T  0000:0
STACK(F+1) = U
                        U ← UNITIN(TINU,B);                                                                   07475000 T  0000:0
                        B ← B.[15:15]-1;                                                                      07476000 T  0002:0
                        IF 32 ≤ U AND U ≤ PSEUDOMAXT  THEN                                                    07477000 T  0003:3
                        IF LABELTABLE[U] ≥ 0 THEN                                                             07478000 T  0005:2
                $ SET OMIT = NOT(PACKETS)                                                                     07478099 T  0007:0
                        IF LABELTABLE[U] NEQ @214 AND PACKETACT[U-32]=0 THEN                                  07478100 T  0007:0
                $ POP OMIT                                                                                    07478101 T  0010:3
                        IF CIDROW[U-32] ≠ 0 THEN                                                              07478500 T  0010:3
                            BEGIN                                                                             07479000 T  0012:3
                                ENDOFDECK(U-32,M[B-1]);                                                       07479100 T  0013:1
                                FORGETSPACE(B);                                                               07480000 T  0016:0
                                GO TO EXIT;                                                                   07481000 T  0016:3
                            END;                                                                              07482000 T  0017:1
                                                                                                                        07479000
                        SPOUT(B INX M[B-1]);                                                                  07483000 T  0017:1
                    EXIT:END;                                                                                 07484000 T  0020:1
                                                                                                                        07474000
                                                                                                                SIZE= 0021 WORDS
```

```
                PROCEDURE CHANGEPRIORITY(BUFF,MIX); VALUE BUFF,MIX; REAL BUFF,MIX;                07485000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00241
PRT(570) = CHANGEPRIORITY
                BEGIN INTEGER PRIORITY; REAL B;                                                   07486000 T  0000:0
STACK(F+1) = PRIORITY
STACK(F+2) = B
                 $ SET OMIT = NOT(PACKETS)                                                        07486499 T  0000:0
                     DEFINE UNITNO = PSEUDOMIX[MIX]#;                                             07486500 T  0000:0
                 $ POP OMIT                                                                       07486501 T  0000:0
                     BUFF ← ((B←BUFF).[15:15]-1)&MYP(DUP)-1][9:9:9];                              07487000 T  0000:0
                     STREAM(PRIORITY:B);                                                          07488000 T  0005:0
                     BEGIN SI←B;                                                                  07489000 T  0006:1
                     N:    IF SC="←" THEN GO TO X;                                                07490000 T  0006:2
                           IF SC<"0" THEN BEGIN SI←SI+1; GO TO N; END; B←SI;                      07491000 T  0007:1
                                                                                                                 07491000
                     K:    IF SC≥"0" THEN IF SC≤"9" THEN                                          07492000 T  0008:2
                                 BEGIN TALLY←TALLY+1; SI←SI+1; GO TO K END;                       07493000 T  0009:2
                                                                                                                 07493000
                           SI←B; DI←LOC PRIORITY; B←TALLY; DS←B OCT; GO TO Z;                      07494000 T  0010:1
                     X:    DI←LOC PRIORITY; SKIP DB; DS←11 SET;                                   07495000 T  0011:3
                     Z:                                                                           07496000 T  0012:2
                     END STREAM;                                                                  07497000 T  0012:2
                                                                                                                 07489000
                      IF (PRIORITY←P) ≥ 0 THEN                                                    07498000 T  0012:3
                     IF PRYOR[MIX]≥0 THEN%                                                        07501000 T  0013:3
                     IF JAR[MIX,*]≠0 THEN                                                         07502000 T  0015:1
                   BEGIN JAR[MIX,2].[CF]← PRYOR[MIX]← P(PRIORITY←                                 07503000 T  0016:3
                       IF PRIORITY≥32766 THEN 32766 ELSE PRIORITY, DUP) & P[CTF];                  07503500 T  0019:1
                          STREAM(J←JAR[MIX,*],MIX,PRIORITY,BUFF);                                  07504000 T  0023:3
                          BEGIN DS←10 LIT " PRIORITY=";                                            07505000 T  0025:2
                                SI←LOC PRIORITY; BUFF←DI; DS←6 DEC; DI←DI-6;                       07506000 T  0027:0
                                DS←5 FILL; DI←BUFF; DI←DI+6; DS←LIT":";                            07507000 T  0028:0
                                SI←J; SI←SI+1; DS←7 CHR; SI←SI+1; DS←LIT"/"; DS←7 CHR;             07508000 T  0029:1
                                DS←LIT"="; SI←LOC MIX; DS←2DEC; DS←LIT"←";                         07509000 T  0031:0
                                DI←DI-3; DS←FILL;                                                  07509500 T  0032:2
                     END    END;                                                                  07510000 T  0033:0
                                                                                                                 07505000
                                                                                                                 07503000
                     SPOUTER(BUFF,UNITNO,1);                                                      07511000 T  0033:1
END CHANGEPRIORITY;                                                                               07512000 T  0034:3
                                                                                                                 07486000
                                                                                                    SIZE= 0036 WORDS
```

```
                PROCEDURE ENTERCONTROLDECK(H); VALUE H; ARRAY H[*];                                  07541000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00243
                BEGIN REAL R,S,T,T1,T2;                                                              07542000 T  0000:0
STACK(F+1) = R
STACK(F+2) = S
STACK(F+3) = T
STACK(F+4) = T1
STACK(F+5) = T2
                    INTEGER I;                                                                       07543000 T  0000:0
STACK(F+6) = I
                 $ SET OMIT = NOT(PACKETS)                                                           07543099 T  0000:0
                   LABEL MORE;                                                                      07543100 T  0000:0
                 $ POP OMIT                                                                         07543101 T  0000:0
                   T←"DECK    "&H[4][1:47:1]; % FOR SCRATCHDIR DELETE                               07545000 T  0000:0
                   S:=NEXTCDNUM(0);                                                                 07547000 T  0003:2
                   DISKWAIT(KLUMP,3,DIRECTORYTOP+3);          % CHANGE LASTCDNUM ON DISK            07547100 T  0004:3
                 $ SET OMIT = NOT(PACKETS)                                                          07547499 T  0006:2
                MORE:                                                                               07547500 T  0006:2
                 $ POP OMIT                                                                         07547501 T  0006:2
                    H[0]:=@0012000360000301;                                                        07548000 T  0006:2
                 $ SET OMIT = NOT(PACKETS)                                                          07548099 T  0007:3
                    T2←H[6].[FF]; H[6].[FF]←T1;                                                     07548100 T  0007:3
                 $ POP OMIT                                                                         07548101 T  0011:1
                    STREAM(DATE,8←[H[3]]);                                                          07549000 T  0011:1
                       BEGIN SI←LOC DATE;DS←8 OCT;DI←DI-8;DS←2 LIT"+7";END;                         07549100 T  0012:2
                                                                                                                07549100
                       H[4] := 0&                                                                   07550000 T  0014:0
                 $ SET OMIT = NOT SHAREDISK                                                         07550003 T  0014:3
                            15[12:44:4];                                                            07550010 T  0014:3
                       H[1]←(XCLOCK+P(RTR))&H[3][6:30:18];                                          07550100 T  0016:1
                       H[2]:=S:=@14&@12[6:42:6]&S[12:24:24]&@37[36:42:6];                           07557000 T  0019:1
                   T1:=FUF(T,S,H,[CF]=1);                                                           07559000 T  0024:0
                $ SET OMIT = NOT(PACKETS)                                                           07559099 T  0027:0
                  IF T2 NEQ 0 THEN                                                                  07559100 T  0027:0
                       BEGIN DISKWAIT(-(H INX 0), 30, T2);                                          07559110 T  0027:3
                            FORGETESPDISK(T2);                                                      07559120 T  0030:2
                            S←H[2]; GO TO MORE;                                                     07559180 T  0031:1
                       END;                                                                         07559190 T  0035:0
                                                                                                                07559110
                $ POP OMIT                                                                          07559191 T  0035:0
                  H[2]←LASTCDNUM;                                                                   07559500 T  0035:0
                  IF FIRSTDECK=0 THEN FIRSTDECK:=T1 ELSE                                            07560000 T  0036:1
                    BEGIN                                                                           07561000 T  0038:1
                $ SET OMIT = SHAREDISK                                                              07561990 T  0038:3
                           LOCKDIRECTORY;                                                           07562000 T  0038:3
                                                                                                                07562000
                                                                                                                07562000
                $ POP OMIT                                                                          07562010 T  0045:1
                           DISKWAIT(-(I:=SPACE(30)),-30,LASTDECK);                                  07564000 T  0045:1
                           M[I+6].[CF]:=T1;                                                         07565000 T  0049:0
                           DISKWAIT(I,-30,LASTDECK);                                                07566000 T  0051:3
                           FORGETSPACE(I);                                                          07567000 T  0053:1
                $ SET OMIT = SHAREDISK                                                              07567990 T  0054:0
                           UNLOCKDIRECTORY;                                                         07568000 T  0054:0
                                                                                                                07568000
                                                                                                                07568000
                $ POP OMIT                                                                          07568010 T  0057:2
```

```
      END;                                                                                    07569000 T  005?2
                                                                                                       07561000
    LASTDECK?=T1;                                                                             07570000 T  005?2
    DISKWAIT(KLUMP,-3,DIRECTORYTOP+3);                                                        07571000 T  005?1
    UNLOCKTOG(CDMASK);                                                                        07572000 T  006?1
                                                                                                       07572000
                IF RUNUMBER GTR 0 THEN STARTADECK(0);                                         07573000 T  006?3
END ENTERCONTROLDECK;                                                                         07575000 T  006?3
                                                                                                       07542000
                                                                                                SIZE= 0068 WORDS
```

```
BOOLEAN PROCEDURE MTXIN(I,U,BUFF);%                                                  08000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00246
      REAL U,BUFF; INTEGER I;%                                                       08001000 T  0000:0
      BEGIN LABEL EXIT,X;%                                                           08002000 T  0000:0
            U ← UNITIN(TINU,BUFF);                                                   08003000 T  0000:0
            BUFF ← BUFF.[15:15]=1;                                                   08004000 T  0002:1
            IF U > 15 THEN%                                                          08005000 T  0004:1
                  BEGIN;STREAM(BUFF); DS ← 8 LIT "INV KBD ";%                        08006000 T  0005:0
                        GO TO EXIT;%                                                 08007000 T  0007:3
                  END ELSE I ← TWO(U);                                               08008000 T  0008:1
                                                                                                 08006000
            STREAM(A←TINU[U];BUFF);%                                                 08009000 T  0010:1
                  BEGIN SI←LOC A; SI←SI+5; DS←LIT" "; DS←3 CHR;%                     08010000 T  0011:3
                        DS ← LIT " "; A ← DI;%                                       08011000 T  0013:0
                  END;%                                                              08012000 T  0013:3
                                                                                                 08010000
            P([BUFF],←);%                                                            08013000 T  0014:0
            IF LABELTABLE[U] = @114 OR LABELTABLE[U] = @214 THEN%                    08014000 T  0014:2
                  BEGIN                                                              08015000 T  0016:3
                  STREAM(SAV:=((I AND SAVEWORD) NEQ 0), BUFF);                       08015100 T  0017:1
                     BEGIN                                                           08015200 T  0019:1
                     DS:=10LIT"NOT READY←";                                          08015300 T  0019:1
                     SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                              08015400 T  0020:3
                     END;                                                            08015500 T  0023:0
                                                                                                 08015200
                  GO TO EXIT;                                                        08016000 T  0023:1
                  END;%                                                              08017000 T  0023:3
                                                                                                 08015000
            IF LABELTABLE[U] < 0 THEN%                                               08018000 T  0023:3
                  BEGIN;STREAM(BUFF); DS ← 7 LIT "IN USE←";%                         08019000 T  0024:3
                  END%                                                               08020000 T  0027:2
                                                                                                 08019000
            ELSE GO TO X;%                                                           08021000 T  0027:2
      EXIT:MTXIN ← TRUE;%                                                            08022000 T  0027:2
      X:END;%                                                                        08023000 T  0028:1
                                                                                                 08002000
                                                                                  SIZE= 0029 WORDS
```

```
                    PROCEDURE TAPEPURGE(BUFF); VALUE BUFF; REAL BUFF;%                                  08024000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00247
PRT(571) = TAPEPURGE
                         BEGIN LABEL EXIT;%                                                             08025000 T  0000:0
                               REAL I,U;%                                                               08026000 T  0000:0
STACK(F+1) = I
STACK(F+2) = U
                               REAL R,T;                                                                08027000 T  0000:0
STACK(F+3) = R
STACK(F+4) = T
                               BOOLEAN TEST;                                                            08027100 T  0000:0
STACK(F+5) = TEST
                               REAL WHAT = BUFF;%                                                       08028000 T  0000:0
STACK(F-1) = WHAT
                               IF MTXIN(I,U,WHAT) THEN GO TO EXIT;%                                     08029000 T  0000:0
                               STREAM(B:=BUFF,T+[T]);                                                   08029015 T  0003:1
                               BEGIN SI:=B; SI:=SI+6;                                                   08029020 T  0004:1
                               IF SC="=" THEN                                                           08029025 T  0004:3
                                  BEGIN SI:=SI+1;                                                       08029030 T  0005:1
                                  5(IF SC="+" THEN JUMP OUT;                                            08029035 T  0005:2
                                    TALLY:=TALLY+1;SI:=SI+1);                                           08029040 T  0006:3
                                  B:=TALLY; SI:=SI-B; DS:=B OCT;                                        08029045 T  0007:2
                                  DI+DI-8;  DS+LIT "+";                                 %725-           08029046 C  0008:3
                                  END;                                                                  08029050 T  0009:2
                                                                                                                   08029030
                               END;                                                                     08029055 T  0009:2
                                                                                                                   08029020
                               LABELTABLE[U] + -@14;                                                    08029100 T  0009:3
                               IF (R+WAITIO(@500000000,@177,U))≠0 THEN                                  08030000 T  0011:1
                                IF R≠@120 THEN %ERROR OTHER THAN WRITE LOCK                             08030100 T  0013:2
                                BEGIN;STREAM(U+TINU[U],BUFF);                                           08030200 T  0014:3
                                      BEGIN DS+14 LIT "#CANNOT PURGE ";                                 08030300 T  0016:2
                                            SI+LOC U; SI+SI+5; DS+3CHR;                                 08030310 T  0018:2
                                            DS+LIT"+";                                                  08030320 T  0019:1
                                      END;                                                              08030330 T  0019:3
                                                                                                                   08030300
                                LABELTABLE[U]+@214;                                                     08030400 T  0020:0
                                GO TO EXIT;                                                             08030500 T  0021:1
                                END ELSE %NO WRITE RING                                                 08030600 T  0023:0
                                                                                                                   08030200
                                    BEGIN; STREAM(BUFF); DS + 11 LIT "WRITE LOCK+";%                    08031000 T  0023:0
                                         LABELTABLE[U] + @114;                                          08031100 T  0026:1
                                         GO TO EXIT;%                                                   08032000 T  0027:2
                                    END;%                                                               08033000 T  0028:0
                                                                                                                   08031000
IF NOT T.[1:1] THEN IF T=0 THEN                                                 %725-                   08033980 P  0028:0
BEGIN T:=PRNTABLE[U].[30:18]; TEST:= TRUE END;                                                          08033990 T  0030:1
                                                                                                                   08033990
IF T.[1:1]=0 AND T=0 THEN BEGIN                                                 %725-                   08033992 C  0033:0
   STREAM(BUFF); DS+17 LIT "NOT PG-ED(PRN=0)+";                                 %725-                   08033993 C  0035:3
     LABELTABLE[U]+ @14; GO EXIT END;      T+ABS(T);                            %725-                   08033994 C  0039:1
                                                                                                                   08033992
STREAM(A:=T,BUFF);                                                                                      08034000 T  0042:0
     BEGIN DI + DI + 3; DS + 8 LIT " LABEL  ";                                                          08035000 T  0043:0
          8(DS+2 LIT "0X");                                                                             08035100 T  0044:2
          24(DS+2 LIT "0");  DS+2 LIT "≥+";                                                             08036000 T  0045:2
          DI + DI-21; SI + LOC A; DS + 5 DEC;%                                                          08037000 T  0047:0
```

```
                END;%                                                                    08038000 T  0047:3
                                                                                                  08035000
               RRRMECH ← I OR RRRMECH;%                                                  08039000 T  0048:0
               MULTITABLE[U] ← 0;%                                                       08041000 T  0049:1
               P(WAITIO(@4200000000,0,U),DEL);%                                          08042000 T  0050:2
               R ← WAITIO(BUFF INX @120500000001,@2000000,U) OR%                         08043000 T  0052:0
                    WAITIO(BUFF INX 10,@2000000,U);%                                     08044000 T  0053:3
               IF MOD3IOS THEN                                              %AI          08044500 T  0056:1
                    DO UNTIL P(WAITIO(BUFF INX @340000012,@50,U))=@10       %AI          08044600 T  0057:0
               ELSE                                                         %AI          08044700 T  0059:2
               P(WAITIO(@4200000000,0,U),DEL);%                                          08045000 T  0060:1
               SLEEP([TOGLE],STATUSMASK);                                                08046000 T  0066:2
               RRRMECH ← RRRMECH AND NOT I;%                                             08047000 T  0068:0
               READY ← READY AND NOT I;%                                                 08048000 T  0069:2
               IF R = 0 THEN BEGIN%                                                      08049000 T  0071:0
               LABELTABLE[U] ← @114;%                                                    08050000 T  0072:1
             IF TEST THEN BEGIN STREAM(B←T,BUFF);                           %708-        08051000 P  0073:2
 BEGIN  DS←10 LIT"PG-ED(PRN="; SI←LOC B; DS←5 DEC; DS←2 LIT")←";%708-                    08051004 C  0075:1
END;                    END  % PRINT PRN WITH PLAIN PGMT                    %708-        08051005 C  0077:3
                                                                                                  08051004
                                                                                                  08051000
     ELSE BEGIN STREAM(A:=T,B:=PRNTABLE[U].[30:18],BUFF);                                 08051010 T  0078:0
               BEGIN DS:=10LIT"PG-ED(PRN=";                                              08051020 T  0082:0
               SI:=LOC A; DS:=5 DEC;                                                     08051030 T  0083:2
               DS:=5LIT",WAS ";                                                          08051040 T  0084:0
               SI:=LOC B; DS:=5 DEC;DS:=2LIT")←";                                        08051050 T  0085:0
               END;                                                                      08051060 T  0086:0
                                                                                                  08051020
               PRNTABLE[U].[30:18] ← T;                                                  08051065 T  0086:1
          END;                                                                           08051070 T  0088:3
                                                                                                  08051010
EXIT: SPOUT(NABS(BUFF INX M[BUFF-1]));%                                                  08052000 T  0088:3
          END ELSE BEGIN%                                                                08053000 T  0092:0
                                                                                                  08049000
               LABELTABLE[U] ← @214;%                                                    08054000 T  0092:2
               FORGETSPACE(BUFF);%                                                       08055000 T  0093:3
          END;%                                                                          08056000 T  0094:2
                                                                                                  08053000
END;%                                                                                    08057000 T  0094:2
                                                                                                  08025000
                                                                                              SIZE= 0095 WORDS
```

```
                PROCEDURE GIMEDATE(B,DT); VALUE B,DT; REAL B,DT; FORWARD;
PRT(572) = GIMEDATE
                PROCEDURE REWINDANDLOCK(WHAT); VALUE WHAT; REAL WHAT;%
PRT(573) = REWINDANDLOCK
                        BEGIN REAL BUFF=WHAT,U;%
STACK(F-1) = BUFF
STACK(F+1) = U
                            INTEGER I;%
STACK(F+2) = I
                            LABEL EXIT;%
                            IF MTXIN(I,U,BUFF) THEN GO TO EXIT;%
                            RRRMECH ← RRRMECH OR I;%
                            LABELTABLE[U] ← -@14;%
                            MULTITABLE[U] ← 0;%
                            P(WAITIO(@4200000000,0,U),DEL);%
                            SLEEP([TOGLE],STATUSMASK);
                            RRRMECH ← RRRMECH AND NOT I;%
                            READY ← READY AND NOT I;%
                            LABELTABLE[U] ← @214;%
                            STREAM(BUFF); DS ← 5 LIT "RW/L←";%
                        EXIT:     SPOUT(BUFF INX MT[BUFF-1]);
                        END;%
```

```
                %RH          08070000 T  000:0
START OF REL SEGMENT; DISK ADDRESS = 00251
                             08079000 T  000:0
START OF REL SEGMENT; DISK ADDRESS = 00251
                             08080000 T  000:0
                             08081000 T  000:0
                             08082000 T  000:0
                             08083000 T  000:0
                             08084000 T  002:2
                             08085000 T  003:3
                             08086000 T  005:1
                             08087000 T  006:2
                             08088000 T  008:0
                             08089000 T  009:2
                             08090000 T  011:0
                             08091000 T  012:2
                             08092000 T  013:3
                             08093000 T  015:3
                             08094000 T  018:3
                                                08080000
                                      SIZE= 0020 WORDS
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%      08095050 C  000:0
%************************************************************************%      08095100 P  000:0
%*                                                                      *%      08095150 C  000:0
%*                    P R I N T D I R E C T O R Y                       *%      08095200 C  000:0
%*                    - - - - - - - - - - - - - -                       *%      08095250 C  000:0
%*                                                                      *%      08095300 C  000:0
%*     PURPOSE: THIS PROCEDURE HANDLES THE PD, EX, LF, LC AND LS        *%      08095350 C  000:0
%*          MESSAGES.  ALL  MESSAGES ARE FORMS OF THE PD MESSAGE        *%      08095400 C  000:0
%*          EXCEPT FOR CERTAIN  DIFFERENCES. THE PD MESSAGE WILL        *%      08095450 C  000:0
%*          LIST THE NAMES OF  THE  DESIRED  FILES  AS  WELL  AS        *%      08095500 C  000:0
%*          CERTAIN PIECES OF INFORMATION IF REQUESTED.                 *%      08095550 C  000:0
%*                                                                      *%      08095600 C  000:0
%*     SYNTAX:  THE  FORMAT  OF  ALL THE KEYIN MESSAGES WITH THE        *%      08095650 C  000:0
%*          EXCEPTION OF THE LF MESSAGE IS AS FOLLOWS:                  *%      08095700 C  000:0
%*                                                                      *%      08095750 C  000:0
%*          <MESSAGE> <FILE SPECIFIER> <OPTION-LIST>                    *%      08095800 C  000:0
%*                                                                      *%      08095850 C  000:0
%*          <MESSAGE> ::= PD / EX / LC / LS                             *%      08095900 C  000:0
%*                                                                      *%      08095950 C  000:0
%*          <FILE  SPECIFIER>  ::= <FILENAME> /  <FILENAME>  "/"        *%      08096000 P  000:0
%*               <FILENAME>                                             *%      08096050 C  000:0
%*                                                                      *%      08096100 C  000:0
%*          <OPTION-LIST> ::= <EMPTY> / <OPTION> / <OPTION> ,           *%      08096150 C  000:0
%*               <OPTION-LIST>                                          *%      08096200 C  000:0
%*                                                                      *%      08096250 C  000:0
%*          <OPTION> ::= RECS / LAST / DATE / SAVE / SIZE /             *%      08096300 C  000:0
%*               CREATOR / SECURITY / ALL                               *%      08096350 C  000:0
%*                                                                      *%      08096400 C  000:0
%*          <FILENAME> ::= [FROM  1  TO  7 CHARACTERS OPTIONALLY        *%      08096450 C  000:0
%*               ENCLOSED IN QUOTES] / =                                *%      08096500 C  000:0
%*                                                                      *%      08096550 C  000:0
%*          THE SYNTAX FOR THE LF MESSAGE IS:                           *%      08096600 C  000:0
%*                                                                      *%      08096650 C  000:0
%*          LF <USERID> <OPTION-LIST>                                   *%      08096700 C  000:0
%*                                                                      *%      08096750 C  000:0
%*     SEMANTICS:  THE  EX, LF, LC, AND  LS  MESSAGES  ARE  JUST        *%      08096800 C  000:0
%*          MODIFIED FORMS OF  THE PD MESSAGE. THE EX MESSAGE IS        *%      08096850 C  000:0
%*          THE SAME AS A  PD EXCEPT THAT ONLY THE EXPIRED FILES        *%      08096900 C  000:0
%*          ARE LISTED. THE LF IS  THE  SAME  AS  A PD=/= EXCEPT        *%      08096950 C  000:0
%*          THAT  ONLY THE FILES BELONGING TO THE SPECIFIED USER        *%      08097000 P  000:0
%*          ARE LISTED.  THE  LC  MESSAGE  IS  THE SAME AS A "PD        *%      08097050 C  000:0
%*          <FILE  SPECIFIER>  CREATOR".  THE LS MESSAGE IS  THE        *%      08097100 P  000:0
%*          SAME AS "PD <FILE SPECIFIER> SECURITY,CREATOR".             *%      08097150 C  000:0
%*                                                                      *%      08097200 P  000:0
%*               THE OPTIONS SPECIFY WHAT ADDITIONAL INFORMATION        *%      08097250 C  000:0
%*          IS TO BE LISTED  BESIDES THE DEFAULT INFORMATION. IF        *%      08097300 C  000:0
%*          AN UNRECOGNIZABLE WORD IS ENCOUNTERED  IN THE OPTION        *%      08097350 C  000:0
%*          LIST, IT IS IGNORED. THE AVAILABLE OPTIONS ARE:             *%      08097400 C  000:0
%*                                                                      *%      08097450 C  000:0
%*          RECS - NUMBER OF RECORDS IN THE FILE. (SPECIAL LOGIC        *%      08097500 C  000:0
%*               IS INCORPORATED TO THE LIST THE  CORRECT NUMBER        *%      08097550 C  000:0
%*               FOR BACKUP FILES).                                     *%      08097600 C  000:0
%*                                                                      *%      08097650 C  000:0
%*          LAST - LAST ACCESS DATE.                                    *%      08097700 C  000:0
%*                                                                      *%      08097750 C  000:0
%*          DATE - CREATION DATE.                                       *%      08097800 C  000:0
%*                                                                      *%      08097850 C  000:0
```

```
                %*          SAVE - SAVE FACTOR.                                          *%        08097900 C  0000:0
                %*                                                                       *%        08097950 C  0000:0
                %*          SIZE - SIZE OF THE FILE IN SEGMENTS.                         *%        08098000 P  0000:0
                %*                                                                       *%        08098050 C  0000:0
                %*          CREATOR  - PRIVILEGED USERCODE ASSOCAITED WITH FILE.         *%        08098100 P  0000:0
                %*               (FOR BACKUP  FILES  THE LABEL OF THE PRINT FILE         *%        08098150 C  0000:0
                %*               AND THE NAME OF THE PROGRAM CREATING THE BACKUP         *%        08098200 P  0000:0
                %*               IS ALSO LISTED).                                        *%        08098250 C  0000:0
                %*                                                                       *%        08098300 P  0000:0
                %*          SECURITY  - ACCESS PRIVILEGES  OF  THE  FILE,  I.E.,         *%        08098350 C  0000:0
                %*               LOCKED, UNLOCKED, PUBLIC, PRIVATE, FREE.                *%        08098400 P  0000:0
                %*                                                                       *%        08098450 C  0000:0
                %***********************************************************************%        08098500 P  0000:0
                %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%        08098550 P  0000:0
                PROCEDURE PRINTDIRECTORY(BUFF,CODE);                                  %152-     08098600 C  0000:0
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00252
PRT(574) = PRINTDIRECTORY
                  VALUE BUFF,CODE;                                                    %152-     08098650 C  0000:0
                  REAL BUFF,CODE;                                                     %152-     08098700 C  0000:0
                BEGIN                                                                 %152-     08098750 C  0000:0
                                                                                      %152-     08098800 C  0000:0
                  INTEGER                                                             %152-     08098850 C  0000:0
                    I,      % NORMALLY CONTAINS OPTION NUMBER.                         %152-     08098900 C  0000:0
STACK(F+1) = I
                    J;            % JUNK.                                             %152-     08098950 C  0000:0
STACK(F+2) = J
                                                                                      %152-     08099250 C  0000:0
                  REAL                                                                %152-     08099300 P  0000:0
                    MFID,   % MFID OF DESIRED FILE OR  -1 IF "=".                      %152-     08099350 C  0000:0
STACK(F+3) = MFID
                    FID,    % FID OF DESIRED FILE OR -1 IF "=".                        %152-     08099400 P  0000:0
STACK(F+4) = FID
                    C,      % ADDRESS OF DISK HEADER.                                  %152-     08099450 C  0000:0
STACK(F+5) = C
                    D,      % MFID OF LAST FILE FOUND BY SEEKNAM.                      %152-     08099500 P  0000:0
STACK(F+6) = D
                    E,      % FID OF LAST FILE FOUND BY SEEKNAM.                       %152-     08099550 P  0000:0
STACK(F+7) = E
                    N,      % WORK VARIABLE USED BY SEEKNAM TO SAVE INFO.              %152-     08099600 C  0000:0
STACK(F+10) = N
                    T,      % NORMALLY USED TO SAVE DEST. INDEX.                       %152-     08099650 C  0000:0
STACK(F+11) = T
                    INFO,   % BIT MASK FOR OPTIONS SELECTED.                          %152-     08099700 P  0000:0
STACK(F+12) = INFO
                    LABELREC, % ADDRESS OF LABEL RECORD FOR PBD ( IF LC ).            %152-     08099750 P  0000:0
STACK(F+13) = LABELREC
                    STA,    % ORIGINATING STATION. TU/BUFF IN [9:9] FIELD.             %152-     08099775 C  0000:0
STACK(F+14) = STA
                    USERID, % USERID IF LF.                                           %152-     08099800 P  0000:0
STACK(F+15) = USERID
                    X;      % JUNK.                                                    %152-     08099850 C  0000:0
STACK(F+16) = X
                                                                                      %152-     08099900 P  0000:0
                  ARRAY                                                               %152-     08099950 C  0000:0
                    HDR[*], % DESCRIPTOR TO DISK HEADER.                              %152-     08100000 C  0000:0
STACK(F+17) = HDR
                    XLST[*];% SOME DAY WE MAY ALLOW EXCEPTION LIST.                   %152-     08100050 C  0000:0
```

```
STACK(F+20) = XLST

                    BOOLEAN                                                                  %152-      08100100 C  0000:0
                      PBDTOG, % TRUE IF SELECTED FILE IS A PBD.                              %152-      08100150 C  0000:0
STACK(F+21) = PBDTOG                                                                         %152-      08100200 C  0000:0
                      FOUNDAFILE;   % TRUE IF WE LISTED OUT AT LEAST ONE FILE.               %152-      08100250 C  0000:0
STACK(F+22) = FOUNDAFILE

                    LABEL EXIT,DROPOUT,DUMMY,OPTIONS;                                        %152-      08100300 C  0000:0
                    DEFINE NUMOPTS = 7#;                                                     %152-      08100350 C  0000:0
                    DEFINE                                                                   %152-      08100500 C  0000:0
                      TUANDBUF    = [9:9]#,         % TU/BUFF STORED IN [9:9] FIELD.       %152-      08100510 C  0000:0
                      STATUANDBUF = STA.TUANDBUF#; % TU/BUFF OF ORIGINATING STATION.        %152-      08100520 C  0000:0
                    DEFINE PD = (CODE = 0)#,                                                 %152-      08100530 C  0000:0
                           FX = (CODE = 1)#,                                                 %152-      08100550 C  0000:0
                           LC = (CODE = 2)#,                                                 %152-      08100600 C  0000:0
                           LF = (CODE = 3)#,                                                 %152-      08100650 C  0000:0
                           LS = (CODE = 4)#;                                                 %152-      08100700 C  0000:0
                    DEFINE                                                                   %152-      08100750 C  0000:0
                      PRIMARYUSER     = HDR[2]#,          % PRIV. USER CODE.              %152-      08100800 C  0000:0
                      SAVEFACTOR      = HDR[3].[2:10]#,   % SAVE FACTOR.                  %152-      08100850 C  0000:0
                      LASTACCESSDATE  = HDR[3].[12:18]#,  % LAST ACCESS DATE.             %152-      08100900 C  0000:0
                      CREATIONDATE    = HDR[3].[30:18]#,  % CREATION DATE.               %152-      08100950 C  0000:0
                      GUARDFILEMFID   = HDR[5]#,          % MFID OF GUARD FILE.          %152-      08101000 P  0000:0
                      GUARDFILEFID    = HDR[6]#,          % FID OF GUARD FILE.           %152-      08101050 P  0000:0
                      PBDTUANDBUF     = HDR[6].[39:9]#,   % RJE TU/BUFF FOR PBD.         %152-      08101100 P  0000:0
                      PBDTU           = HDR[6].[39:4]#,   % RJE TU NUMBER FOR PBD.       %152-      08101110 C  0000:0
                      PBDBUF          = HDR[6].[44:4]#,   % RJE BUF NUMBER FOR PBD.      %152-      08101120 C  0000:0
                      EOFPOINTER      = HDR[7]#,          % EOF POINTER.                 %152-      08101130 C  0000:0
                      SEGSPERROW      = HDR[8]#,          % SEG. PER ROW.                %152-      08101150 C  0000:0
                      NOOFROWS        = HDR[9].[43:5]#,   % NO. OF ROWS DECLARED.        %152-      08101200 P  0000:0
                      HEADERADDRESS   = HDR.[CF]#;        % CORE ADDRESS OF HEADER.      %152-      08101250 C  0000:0
                  %******************  S U B R O U T I N E S  ***************************  08101300 C  0000:0
                    SUBROUTINE GETREADY;                                                     %152-      08101350 C  0000:0
                  % ---------- --------                                                     %152-      08101400 C  0000:0
                      BEGIN                                                                  %152-      08101450 C  0001:0
                        STA := M[(BUFF := (T:=BUFF).[15:15] -1) -1];                         %152-      08101500 C  0001:0
                   $ SET OMIT = NOT(DATACOM)                                               %152-      08101520 C  0001:0
                        INFO := 0 & (LC OR LF OR LS)[42:47:1] & LS[43:47:1];                 %152-      08101540 C  0005:0
                      END OF GETREADY;                                                       %152-      08101650 C  0005:0
                                                                                             %152-      08101700 C  0010:3
                                                                                                                    08101500
                  %                                                                          %152-      08101750 C  0011:0
                    SUBROUTINE GETFILESPECIFIER;                                             %152-      08101800 C  0011:0
                  % ---------- ----------------                                             %152-      08101850 C  0011:0
                      BEGIN                                                                  %152-      08101900 C  0011:0
                        NAMEID(MFID,T); % GET MFID (OR USERCODE IF "LF")                     %152-      08101950 C  0011:0
                        IF LF THEN USERID := MFID; % FIRST THING IS USERID FOR LF.           %152-      08102000 P  0012:0
                        IF MFID = "++      " OR LF THEN                                      %152-      08102050 C  0014:0
                          MFID := -1;                                                        %152-      08102100 P  0015:3
                        NAMEID(FID,T);                                                       %152-      08102150 C  0017:1
                        IF FID = "/       " THEN % GET FID                                   %152-      08102200 P  0018:1
                          BEGIN                                                              %152-      08102250 C  0019:0
                            NAMEID(FID,T);                                                   %152-      08102300 C  0019:2
                            NAMEID(N,T); % GET NEXT ITEM.                                    %152-      08102350 C  0020:2
                          END                                                                %152-      08102400 C  0021:2
                                                                                                                    08102250
                        ELSE % NO FID SPECIFIED IMPLIES FID OF "="                           %152-      08102450 C  0021:2
```

```
        BEGIN                                                                %152-       08102500 C  0021:2
          N := FID;                                                          %152-       08102550 C  0024:0
          FID := -1;                                                         %152-       08102600 C  0024:3
        END;                                                                 %152-       08102650 C  0025:3
                                                                                                     08102500
      IF FID.[6:6] = LEFTARROW OR LF THEN  % NO FID SPECIFIED                %152-       08102700 C  0025:3
        FID := -1;                                                           %152-       08102750 C  0028:0
    END OF GETFILESPECIFIER;                                                 %152-       08102800 C  0029:2
                                                                                                     08101900
%                                                                            %152-       08102850 C  0029:3
  SUBROUTINE PROCESSOPTIONLIST;                                              %152-       08102900 C  0029:3
% ---------- ----------------                                               %152-       08102950 C  0030:0
    BEGIN                                                                    %152-       08103000 P  0030:0
      WHILE N # "+       " DO % ACCUMULATE OPTIONS                           %152-       08103050 C  0030:0
        BEGIN                                                                %152-       08103100 P  0031:1
          FOR I := -1 STEP 1 UNTIL (NUMOPTS - 2) DO                          %152-       08103150 C  0031:1
    DUMMY:: IF P(.OPTIONS,I,+,LOD) = N THEN % MATCHES AN OPTION WORD                     08103200 P  0035:3
              BEGIN                                                          %152-       08103250 C  0037:2
                INFO := INFO OR TWO(I+1); % SET BIT CORRESPONDING TO OPT                 08103300 P  0038:0
                GO TO DROPOUT;                                               %152-       08103350 C  0040:1
              END                                                            %152-       08103400 P  0042:0
                                                                                                     08103250
            ELSE % CHECK FOR "ALL"                                           %152-       08103450 P  0042:0
              IF N = "ALL     " THEN % SET ALL OPTION WORD BITS.              %152-       08103500 P  0042:0
                INFO := NOT 0;                                               %152-       08103550 C  0043:1
DROPOUT:                                                                     %152-       08103600 P  0047:0
          NAMEID(N,T); % GET NEXT OPTION WORD.                               %152-       08103650 P  0047:0
          IF N = ",       " THEN NAMEID(N,T); % SKIP OVER COMMA.             %152-       08103700 P  0048:0
        END;                                                                 %152-       08103750 C  0050:1
                                                                                                     08103100
      GO TO EXIT;                                                            %152-       08103800 P  0052:0
%                                                                            %152-       08103850 C  0052:2
  OPTIONS ::: "RECS    ", % OPTION 0 (INFO.[47:1])                           %152-       08103900 P  0052:2
              "LAST    ", % OPTION 1 (INFO.[46:1])                           %152-       08103950 C  0054:0
              "DATE    ", % OPTION 2 (INFO.[45:1])                           %152-       08104000 P  0055:0
              "SIZE    ", % OPTION 3 (INFO.[44:1])                           %152-       08104050 C  0056:0
              "SECURIT", % OPTION 4 (INFO.[43:1])                           %152-       08104100 P  0057:0
              "CREATOR", % OPTION 5 (INFO.[42:1])                           %152-       08104150 C  0058:0
              "SAVE    "; % OPTION 6 (INFO.[41:1])                         %152-       08104200 P  0059:0
  EXIT:                                                                      %152-       08104250 C  0060:0
    END OF PROCESSOPTIONLIST;                                                %152-       08104300 P  0060:0
                                                                                                     08103000
%                                                                            %152-       08104350 C  0060:1
  SUBROUTINE GETSET;                                                         %152-       08104400 C  0060:1
% ---------- ------                                                         %152-       08104450 C  0061:0
    BEGIN                                                                    %152-       08104500 C  0061:0
      IF EX OR INFO # 0 OR (PD AND USERID # 0) THEN % WE WILL NEED HDR.                  08104550 C  0061:0
        HDR := IOQUE & SPACE(30) [CTC];                                      %152-       08104600 C  0064:3
    END OF GETSET;                                                           %152-       08104650 C  0068:1
                                                                                                     08104500
%                                                                            %152-       08104700 C  0068:2
  BOOLEAN SUBROUTINE WEGOTAFILE;                                             %152-       08104750 C  0068:2
% ------- ---------- ----------                                             %152-       08104800 C  0069:0
    BEGIN                                                                    %152-       08104850 C  0069:0
      SEEKNAM(MFID,FID,C,D,E,N,XLST); % FIND A FILE.                         %152-       08104900 C  0069:0
      WEGOTAFILE := C # 0; % C IS ADDRESS OF DISK HEADER.                    %152-       08104950 C  0071:2
    END OF WEGOTAFILE;                                                       %152-       08105000 P  0072:2
```

```
                                                                                                      08104850
%                                                                         %152-         08105050 C   0072:3
  BOOLEAN SUBROUTINE WEWANTTHISFILE;                                      %152-         08105100 C   0072:3
% ------- ---------- --------------                                      %152-         08105150 C   0073:0
    BEGIN                                                                 %152-         08105200 C   0073:0
      PRDTOG := ((D EQV "PBD     ") = NOT 0 OR (D EQV "PUD     ")         %152-         08105250 C   0073:0
                 = NOT 0);                                                %152-         08105300 C   0075:1
      IF HEADERADDRESS ≠ 0 THEN % WE NEED THE HEADER.                     %152-         08105350 C   0076:3
        DISKWAIT(-HEADERADDRESS,30,C); % READ HEADER.                     %152-         08105400 C   0078:1
      IF LF THEN % CHECK TO SEE IF WE WANT THIS FILE.                     %152-         08105450 C   0081:0
        WEWANTTHISFILE := PRIMARYUSER = USERID                            %152-         08105500 C   0081:3
      ELSE                                                                %152-         08105550 C   0082:3
        IF EX THEN                                                        %152-         08105600 C   0083:2
          BEGIN                                                           %152-         08105650 C   0086:3
            STREAM(A:=CALCULATEPURGE(-SAVEFACTOR),X:=[X]);                %152-         08105700 C   0087:1
              BEGIN                                                       %152-         08105750 C   0089:3
                SI := LOC A; DS := 8 OCT;                                 %152-         08105800 C   0089:3
              END;                                                        %152-         08105850 C   0090:1
                                                                                                      08105750
            WEWANTTHISFILE := X > LASTACCESSDATE; % TRUE IF FILE EXPIRED                08105900 C   0090:2
          END                                                             %152-         08105950 C   0092:1
                                                                                                      08105650
        ELSE                                                              %152-         08106000 C   0092:1
          IF PD AND USERID ≠ 0 THEN % NEED TO CHECK SECURITY.             %152-         08106020 C   0092:1
            WEWANTTHISFILE := SECURITYCHECK(D,F,USERID,HEADERADDRESS)≠0                 08106040 C   0094:2
          ELSE                                                            %152-         08106060 C   0098:1
            WEWANTTHISFILE := TRUE;                                       %152-         08106080 C   0099:0
    END OF WEWANTTHISFILE;                                                %152-         08106100 C   0100:0
                                                                                                      08105200
%                                                                         %152-         08106150 C   0100:1
  SUBROUTINE PUTINFILENAME;                                               %152-         08106200 C   0100:1
% ---------- -------------                                               %152-         08106250 C   0101:0
    BEGIN                                                                 %152-         08106300 C   0101:0
      STREAM(A:=0 : D, E, BUFF); % SET UP FILE NAME.                      %152-         08106350 C   0101:0
        BEGIN                                                             %152-         08106400 C   0102:3
          SI := LOC D;                                                    %152-         08106450 C   0102:3
          DS := LIT " ";                                                  %152-         08106500 C   0103:0
          2 ( SI := SI + 1; DS := 7 CHR; DS := LIT "/");                  %152-         08106550 C   0103:2
          DI := DI - 1;                                                   %152-         08106600 C   0105:0
          DS := 2 LIT "  "; % NEED 2 SPACES TO ALLOW FOR ARROW.           %152-         08106650 C   0105:1
          A := DI;                                                        %152-         08106700 C   0105:3
        END;                                                              %152-         08106750 C   0106:0
                                                                                                      08106400
      T := P; % SAVE OFF DEST. INDEX.                                     %152-         08106800 C   0106:1
    END OF PUTINFILENAME;                                                 %152-         08106850 C   0106:3
                                                                                                      08106300
%                                                                         %152-         08106900 C   0107:0
  SUBROUTINE DORECS;                                                      %152-         08106950 C   0107:0
% ---------- ------                                                      %152-         08107000 P   0107:0
    BEGIN                                                                 %152-         08107050 C   0107:0
      STREAM(A:=IF PRDTOG THEN EOFPOINTER×5 ELSE EOFPOINTER+1 :T);        %152-         08107100 C   0107:0
                                                                          %152-         08107150 C   0111:1
        BEGIN                                                             %152-         08107200 C   0111:1
          DS := 9 LIT "RECORDS: ";                                        %152-         08107250 C   0111:1
          SI := LOC A;                                                    %152-         08107300 C   0112:3
          DS := 8 DEC; % CONVERT NUMBER OF RECORDS TO DEC.                %152-         08107350 C   0113:0
          A := DI; % SAVE OFF DI BEFORE ZERO SUPPRESSING.                 %152-         08107400 C   0113:1
          DI := DI - 8;                                                   %152-         08107450 C   0113:2
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        DS := 7 FILL;                                                    %152-   08107500 C  0113:3
      END;                                                               %152-   08107550 C  0114:0
                                                                                                 08107200
    T := P; % SAVE DESTINATION ADDRESS.                                  %152-   08107600 C  0114:1
  END OF DORECS;                                                         %152-   08107650 C  0114:3
                                                                                                 08107050
%                                                                        %152-   08107700 C  0115:0
  SUBROUTINE DODATEORLAST;                                               %152-   08107750 C  0115:0
% ---------- -----------                                                %152-   08107800 C  0115:0
    BEGIN                                                                %152-   08107850 C  0115:0
%                                                                        %152-   08107900 C  0115:0
      STREAM(X:=[X]);                                                    %152-   08107950 C  0115:0
        BEGIN                                                            %152-   08108000 C  0115:3
          SI := X;                                                       %152-   08108050 C  0115:3
          DS := 8 DEC; % CONVERT DATE TO DECIMAL.                        %152-   08108100 C  0116:0
        END;                                                             %152-   08108150 C  0116:1
                                                                                                 08108000
      GTMEDATE([X],[CF],-X); % CONVERT JULIAN DATE TO 6 DIGITS.          %152-   08108200 C  0116:2
      STREAM(A:=(I=1) : X, T);                                           %152-   08108250 C  0118:1
        BEGIN                                                            %152-   08108300 C  0120:1
          A ( DS := 10 LIT "ACCESSED: "; JUMP OUT TO L1);                %152-   08108350 C  0120:1
          DS := 9 LIT "CREATED: ";                                       %152-   08108400 C  0123:0
      L1:                                                                %152-   08108450 C  0124:2
          SI := LOC X;                                                   %152-   08108500 C  0124:2
          SI := SI + 2;                                                  %152-   08108550 C  0124:3
          3 ( DS := 2 CHR; DS := LIT "/");                               %152-   08108600 C  0125:0
          DI := DI - 1; % ERASE THE EXTRA SLASH.                         %152-   08108650 C  0126:1
          A := DI; % SAVE DEST. INDEX.                                   %152-   08108700 C  0126:2
        END;                                                             %152-   08108750 C  0126:3
                                                                                                 08108300
    T := P; % SAVE DESTINATION ADDRESS.                                  %152-   08108800 C  0127:0
  END OF DODATEORLAST;                                                   %152-   08108850 C  0127:2
                                                                                                 08107850
%                                                                        %152-   08108900 C  0127:3
  SUBROUTINE DOSIZE;                                                     %152-   08108950 C  0127:3
% ---------- ------                                                     %152-   08109000 P  0128:0
    BEGIN                                                                %152-   08109050 C  0128:0
      NT2 := NOOFROWS; % NO. OF ROWS DECLARED.                           %152-   08109100 C  0128:0
      NT1 := 0; % NUMBER OF ROWS PROCESSED.                              %152-   08109150 C  0129:2
      FOR J := 1 STEP 1 UNTIL NT2 DO % CHECK TO SEE IF ROW EXISTS.       %152-   08109200 C  0130:1
        IF HDR[J+9] ≠ 0 THEN NT1 := NT1 + 1; % BUMP UP COUNT.            %152-   08109250 C  0131:0
      STREAM(A:=NT1×SEGSPERROW : T);                                     %152-   08109300 C  0136:2
        BEGIN                                                            %152-   08109350 C  0138:2
          DS := 10 LIT "SEGMENTS: ";                                     %152-   08109400 C  0138:2
          SI := LOC A;                                                   %152-   08109450 C  0140:0
          DS := 8 DEC;                                                   %152-   08109500 C  0140:1
          A := DI;                                                       %152-   08109550 C  0140:2
          DI := DI - 8;                                                  %152-   08109600 C  0140:3
          DS := 7 FILL;                                                  %152-   08109650 C  0141:0
        END;                                                             %152-   08109700 C  0141:1
                                                                                                 08109350
    T := P; % SAVE DESTINATION ADDRESS.                                  %152-   08109750 C  0141:2
  END OF DOSIZE;                                                         %152-   08109800 C  0142:0
                                                                                                 08109050
%                                                                        %152-   08109850 C  0142:1
  SUBROUTINE DOSECURITY;                                                 %152-   08109900 C  0142:1
% ---------- ----------                                                 %152-   08109950 C  0143:0
```

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  BEGIN                                                                  %152-    08110000 P  0143:0
    J := IF PRIMARYUSER = 0 THEN 0 % FREE FILE                           %152-    08110050 C  0143:0
         ELSE IF GUARDFILEMFID = "?" THEN % UNLOCK OR PUBLIC             %152-    08110100 C  0144:3
                 IF GUARDFILEFID = "?" THEN 1 % UNLOCKED                 %152-    08110150 C  0146:1
                                       ELSE 2 % PUBLIC                   %152-    08110200 C  0148:2
              ELSE IF GUARDFILEMFID < 0 THEN 3 % PRIVATE                 %152-    08110250 C  0149:1
                                        ELSE 4; % LOCKED                 %152-    08110300 C  0151:2
    STREAM(J : A:=GUARDFILEMFID, B:=GUARDFILEFID, T);                    %152-    08110350 C  0152:3
      BEGIN                                                              %152-    08110400 C  0155:0
        DS := 10 LIT "SECURITY: ";                                       %152-    08110450 C  0155:0
        CI := CI + J;                                                    %152-    08110500 C  0156:2
          GO TO FREE;                                                    %152-    08110550 C  0157:0
          GO TO UNLOK;                                                   %152-    08110600 C  0157:1
          GO TO PUBLIC;                                                  %152-    08110650 C  0157:2
          GO TO PRIVATE;                                                 %152-    08110700 C  0157:3
LOCK:   DS := 6 LIT "LOCKED"; GO TO EXIT;                                %152-    08110750 C  0158:0
PRIVATE:DS := 22 LIT "PRIVATE (SECURED WITH ";                           %152-    08110800 C  0159:1
        SI := LOC A;                                                     %152-    08110850 C  0162:1
        2 ( SI := SI + 1; DS := 7 CHR; DS := LIT "/");                   %152-    08110900 C  0162:2
        DI := DI - 1;                                                    %152-    08110950 C  0164:0
        DS := LIT ")";                                                   %152-    08111000 P  0164:1
        GO TO EXIT;                                                      %152-    08111050 C  0164:3
PUBLIC: DS := 6 LIT "PUBLIC"; GO TO EXIT;                                %152-    08111100 C  0165:0
UNLOK:  DS := 8 LIT "UNLOCKED"; GO TO EXIT;                              %152-    08111150 C  0166:1
FREE:   DS := 4 LIT "FREE";                                              %152-    08111200 C  0167:3
EXIT:   J := DI;                                                         %152-    08111250 C  0168:2
      END;                                                               %152-    08111300 C  0168:3
                                                                                                 08110400
    T := P; % SAVE DESTINATION ADDRESS.                                  %152-    08111350 C  0169:0
  END OF DOSECURITY;                                                     %152-    08111400 C  0169:2
                                                                                                 08110000
%                                                                        %152-    08111450 C  0169:3
  SUBROUTINE DOCREATOR;                                                  %152-    08111500 C  0169:3
% ---------- ---------                                                   %152-    08111550 C  0170:0
    BEGIN                                                                %152-    08111600 C  0170:0
 $SET OMIT = PACKETS                                                     %152-    08111650 C  0170:0
 $SET OMIT = NOT(PACKETS)                                                %152-    08111800 C  0170:0
     IF J:=(PBDTOG AND (E.[42:6] = 1)) THEN % REEL 1 OF PBD              %152-    08111850 C  0170:0
 $POP OMIT                                                               %152-    08111900 C  0172:1
       BEGIN                                                             %152-    08111950 C  0172:1
         IF LABELREC = 0 THEN LABELREC := SPACE(30);                     %152-    08112000 P  0172:3
         DISKWAIT(-LABELREC,30,HDR[10]+2);                               %152-    08112050 C  0176:1
       END;                                                              %152-    08112100 C  0178:2
                                                                                                 08111950
      STREAM(J : B:= PRIMARYUSER=0, C:=PRIMARYUSER,                      %152-    08112150 C  0178:2
             RJE := PBDTUANDBUF#0, TU:=PBDTU, BUF:=PBDBUF,               %152-    08112175 C  0180:3
             D:=LABELREC INX 12, T);                                     %152-    08112200 C  0184:1
        BEGIN                                                            %152-    08112250 C  0185:2
          DS := 9 LIT "CREATOR: ";                                       %152-    08112300 C  0185:2
          B ( DS := 4 LIT "NONE"; JUMP OUT TO L2 );                      %152-    08112350 C  0187:0
          SI := LOC C;                                                   %152-    08112400 C  0189:0
          SI := SI + 1;                                                  %152-    08112450 C  0189:1
          DS := 7 CHR;                                                   %152-    08112500 C  0189:2
       L2:                                                               %152-    08112550 C  0189:3
          J ( DS := 2 LIT " (";                                          %152-    08112600 C  0189:3
          SI := D;                                                       %152-    08112650 C  0190:3
              2 ( SI := SI + 1; DS := 7 CHR; DS := LIT "/");             %152-    08112700 C  0191:0
```

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                DI := DI - 1; DS := 4 LIT " OF ";                          %152-   08112750 C  0192:2
                2 ( SI := SI + 1; DS := 7 CHR; DS := LIT "/");             %152-   08112800 C  0193:2
                DI := DI - 1;                                              %152-   08112820 C  0195:0
                RJF (DS := 2 LIT " ["; SI := TU;                           %152-   08112840 C  0195:1
                     DS := 2 DEC; DS := LIT "/"; DS := 2 DEC;              %152-   08112860 C  0196:2
                     DS := LIT "]");                                       %152-   08112880 C  0197:2
                DS := LIT ")");                                            %152-   08112890 C  0198:1
              J := DI;                                                     %152-   08112900 C  0199:0
            END;                                                           %152-   08112950 C  0199:1
                                                                                                 08112250
          T := P; % SAVE DESTINATION ADDRESS.                              %152-   08113000 P  0199:2
        END OF DOCREATOR;                                                  %152-   08113050 C  0200:0
                                                                                                 08111600
%                                                                          %152-   08113100 C  0200:1
  SUBROUTINE DOSAVEFACTOR;                                                 %152-   08113150 C  0200:1
% ---------- -----------                                                   %152-   08113200 C  0201:0
    BEGIN                                                                  %152-   08113250 C  0201:0
      STREAM(A := SAVEFACTOR : T);                                         %152-   08113300 C  0201:0
        BEGIN                                                              %152-   08113350 C  0203:0
          DS := 6 LIT "SAVE: ";                                            %152-   08113400 C  0203:0
          SI := LOC A;                                                     %152-   08113450 C  0204:0
          DS := 3 DEC;                                                     %152-   08113500 C  0204:1
          A := DI;                                                         %152-   08113550 C  0204:2
          DI := DI - 3;                                                    %152-   08113600 C  0204:3
          DS := 2 FILL;                                                    %152-   08113650 C  0205:0
        END;                                                               %152-   08113700 C  0205:1
                                                                                                 08113350
      T := P; % SAVE DESTINATION ADDRESS.                                  %152-   08113750 C  0205:2
    END OF DOSAVEFACTOR;                                                   %152-   08113800 C  0206:0
                                                                                                 08113250
%                                                                          %152-   08113850 C  0206:1
  SUBROUTINE DOOPTIONS;                                                    %152-   08113900 C  0206:1
% ---------- ---------                                                     %152-   08113950 C  0207:0
    BEGIN                                                                  %152-   08114000 P  0207:0
      FOR I := 0 STEP 1 UNTIL (NUMOPTS - 1) DO % SEE IF OPTION BIT SET.    %152-   08114050 C  0207:0
        IF (TWO(I) AND INFO) ≠ 0 THEN %OPTION SELECTED.                    %152-   08114100 C  0211:1
          BEGIN                                                            %152-   08114150 C  0213:0
            CASE I OF                                                      %152-   08114200 C  0213:2
              BEGIN                                                        %152-   08114210 C  0213:3
                DORECS;          % CASE 0 = "RECS"                        %152-   08114250 C  0214:1
                BEGIN            % CASE 1 = "LAST"                        %152-   08114290 C  0215:2
                  X := LASTACCESSDATE;                                     %152-   08114300 C  0215:2
                  DODATEORLAST;                                            %152-   08114310 C  0217:0
                END OF CASE 1;                                             %152-   08114320 C  0218:0
                                                                                                 08114290
                BEGIN            % CASE 2 = "DATE"                        %152-   08114340 C  0218:2
                  X := CREATIONDATE;                                       %152-   08114350 C  0218:2
                  DODATEORLAST;                                            %152-   08114360 C  0220:0
                END OF CASE 2;                                             %152-   08114370 C  0221:0
                                                                                                 08114340
                DOSIZE;          % CASE 3 = "SIZE"                        %152-   08114400 C  0221:2
                DOSECURITY;      % CASE 4 = "SECURITY"                    %152-   08114450 C  0223:2
                DOCREATOR;       % CASE 5 = "CREATOR"                     %152-   08114500 C  0225:2
                DOSAVEFACTOR;    % CASE 6 = "SAVE"                        %152-   08114550 C  0227:2
              END OF CASES;                                                %152-   08114600 C  0229:2
                                                                                                 08114210
              STREAM(I : T); % PUT COMMA AFTER LAST OPTION.                %152-   08114650 C  0233:3
```

```
                BEGIN
                  DS := 2 LIT ", ";
                  I := DI;
                END;

              T := P;
            END OF LOOP TO PROCESS OPTIONS;

    END OF DOOPTIONS;

%
  SUBROUTINE MAKETHEMESSAGE;
% ---------- -------------
    BEGIN
      IF FOUNDAFILE THEN % WE NEED A BUFFER.
        BUFF := SPACE(30);
      PUTINFILENAME;
      DOOPTIONS;
      STREAM(T); % PUT IN THE LEFT ARROW.
        BEGIN
          DI := DI -2;
          DS := LIT LEFTARROW;
        END;

    END OF MAKETHEMESSAGE;

%
  SUBROUTINE COMPLAIN;
% ---------- --------
    BEGIN
      STREAM(BUFF);
        DS := 8 LIT " NULL    "; % ORIGINAL INPUT IS AT BUFF + 1.
      SPOUT(BUFF INX STA);
    END OF COMPLAIN;

%
  SUBROUTINE FORGETEVERYTHING;
% ---------- ---------------
    BEGIN
      IF HEADERADDRESS ≠ 0 THEN FORGETSPACE(HEADERADDRESS);
      IF LABELREC ≠ 0 THEN FORGETSPACE(LABELREC);
    END OF FORGETEVERYTHING;

%******************** S T A R T   O F   C O D E ************************
    GETREADY;
    GETFILESPECIFIER;
    PROCESSOPTIONLIST;
    GETSET;
    WHILE WEGOTAFILE DO
      IF WEWANTTHISFILE THEN
        BEGIN
          MAKETHEMESSAGE;
          SPOUT(BUFF INX STA);
          FOUNDAFILE := TRUE;
        END;

    IF NOT FOUNDAFILE THEN COMPLAIN;
```

```
%152-        08114700 C  0235:0
%152-        08114750 C  0235:0
%152-        08114800 C  0235:2
%152-        08114850 C  0235:3
                                  08114700
%152-        08114900 C  0236:0
%152-        08114950 C  0236:2
                                  08114150
%152-        08115000 P  0237:0
                                  08114000
%152-        08115050 C  0237:1
%152-        08115100 P  0237:1
%152-        08115150 C  0238:0
%152-        08115200 P  0238:0
%152-        08115250 C  0238:0
%152-        08115300 C  0238:1
%152-        08115350 C  0241:0
%152-        08115400 C  0242:0
%152-        08115450 C  0243:0
%152-        08115500 C  0243:3
%152-        08115550 C  0243:3
%152-        08115600 C  0244:0
%152-        08115650 C  0244:2
                                  08115500
%152-        08115700 C  0244:3
                                  08115200
%152-        08115750 C  0245:0
%152-        08115800 C  0245:0
%152-        08115850 C  0245:0
%152-        08115900 C  0245:0
%152-        08115950 C  0245:0
%152-        08116000 P  0245:3
%152-        08116050 C  0247:1
%152-        08116100 C  0249:0
                                  08115900
%152-        08116150 C  0249:1
%152-        08116200 C  0249:1
%152-        08116250 C  0250:0
%152-        08116300 C  0250:0
%152-        08116350 C  0250:0
%152-        08116400 C  0253:2
%152-        08116450 C  0255:2
                                  08116300
        08116500 C  0255:3
%152-        08116550 C  0255:3
%152-        08116600 C  0262:0
%152-        08116650 C  0263:0
%152-        08116700 P  0264:0
%152-        08116750 C  0265:0
%152-        08116800 P  0266:2
%152-        08116850 C  0268:0
%152-        08116900 P  0268:2
%152-        08116950 C  0270:0
%152-        08117000 P  0271:3
%152-        08117050 C  0272:2
                                  08116850
%152-        08117100 P  0273:0
```

```
FORGETEVERYTHING;
END OF PRINTDIRECTORY;
```

```
%152=        08117150 C  027510
%152=        08117200 P  027610
                                 08098750
                       SIZE= 0277 WORDS
```

```
                $ SET OMIT = NOT(DCSPO AND DATACOM )                                                    08135999 T  0000:0
                PROCEDURE CONTINUITYBIT;%                                                               08171000 T  0000:0
                                                                                          START OF REL SEGMENT: DISK ADDRESS = 00262
                      BEGIN REAL T,IOD,LINK,U;%                                                         08172000 T  0000:0
STACK(F+1) = T
STACK(F+2) = IOD
STACK(F+3) = LINK
STACK(F+4) = U

                      ARRAY A[*];                                                                       08172500 T  0000:0
STACK(F+5) = A

                      REAL RCW=+0;%                                                                     08173000 T  0000:0
STACK(F+0) = RCW

                            ARRAY R=-4[*];  DEFINE FIB=A#;                          %P                08173100 T  0000:0
STACK(F-4) = R

                      CHECKSTACKSPACE;%                                             %WF               08173200 T  0000:0
                                                                                                                   08173200
                      U ←(LINK ← NFLAG(M[(IOD ← NFLAG(M[T←PRT[P1MIX,9]]) INX%                           08174000 T  0005:2
                           P(0,LNG,XCH)) INX NOT 0])),[12:6];%                                          08175000 T  0008:0
                      IF U ≥ 32 THEN                                                                    08175100 T  0012:3
                           BEGIN A ← M[T];                                                              08175200 T  0013:2
                                 IF READEMFROMDISK(CIDROW[U-32],A) THEN                                 08175300 T  0015:2
                                      M[T] ← A&1[27:47:1]&0[2:47:1] ELSE                                08175400 T  0017:2
                                      M[T] ← R; GO TO RETURN;                                           08175500 T  0021:3
                           END;                                                                         08175600 T  0024:2
                                                                                                                   08175200
                      M[IOD INX NOT 1]←FLAG(LINK); FIB←M[T-3];                          %P              08176000 T  0024:2
                      M[FIB[14]INX 17]←[M[FIB[5],[FF]]]&IOD[3:3:30]&0[20:20:1];                         08177000 T  0029:0
                     ;FIB[5]←P(DUP,LOD,0,1,CFX,ADD);                                    %P              08177100 T  0034:2
                      IF FIB[14].[FF]≤FIB[14].[CF] THEN  %% BUFFER FULL                 %P              08177200 T  0037:0
                               PBIO(T,FIB[14])                                          %P              08178000 T  0039:1
                            ELSE                                                        %P              08179000 T  0041:2
                      BEGIN; STREAM(A←FIB[14].[CF], B←FIB[14].[FF]);                    %P              08179600 T  0041:3
                               BEGIN SI←A; DS←18 WDS END;                               %P              08179700 T  0044:3
                                                                                                                   08179700
                           FIB[14].[FF]←FIB[14].[FF]-18;                                %P              08179800 T  0045:2
                      END;                                                              %P              08179900 T  0048:3
                                                                                                                   08179600
                      GO RETURN                                                         %P              08180000 T  0048:3
                END CONTINUITYBIT;                                                      %P              08181000 T  0049:1
                                                                                                                   08172000
                                                                                                      SIZE= 0050 WORDS
```

```
BOOLEAN PROCEDURE PRINTORPUNCHWAIT(Q,PNCH);VALUE Q,PNCH;REAL Q,PNCH;          08255000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00264
%                                                                             08255050 T  0000:0
%   THIS PROCEDURE IS RESPONSIBLE FOR STARTING PRNPBT/DISK. IT CHECKS         08255055 T  0000:0
%   FOR I/O UNITS AS REQUIRED AND, IF AVAILABLE, GRABS THEM. THE              08255060 T  0000:0
%   PARAMETERS ARE:                                                           08255065 T  0000:0
%   Q     <=16       LOGICAL UNIT NUMBER FOR OUTPUT. TAPES AND DISK ARE       08255070 T  0000:0
%                    SEARCHED TO FIND A FILE TO PRINT. THIS IS USED ONLY      08255075 T  0000:0
%                    WHEN AUTOPRINT IS SET OR FOR RJE.                        08255080 T  0000:0
%         >=16, <0   LOGICAL UNIT NUMBER OF A BACK-UP TAPE. CHECK FOR AN      08255085 T  0000:0
%                    AVAILABLE OUTPUT UNIT.                                   08255090 T  0000:0
%         >0         FID OF A DISK FILE. CHECK FOR OUTPUT UNIT.               08255095 T  0000:0
%   PNCH.[47:1]      ON FOR PUNCH BACK-UP.                                    08255100 T  0000:0
%        [39:8]      NUMBER OF COPIES FROM PB MESSAGE.                        08255105 T  0000:0
%        [31:8]      IF TAPE, NUMBER OF FILE TO PRINT (FROM PB).              08255110 T  0000:0
%                    IF DISK, =0 IF ENTIRE PACKET SHOULD BE PRINTED, =1 IF    08255115 T  0000:0
%                    NOT.                                                     08255120 T  0000:0
%        [30:1]      ON IF =0 WAS USED IN PB MSG.                             08255122 T  0000:0
%        [9:9]       RJE TU/BUFF.                                             08255125 T  0000:0
%        [2:1]       ON IF CALLED FROM PRINTBACKUP, I.E. A PB MESSAGE.        08255130 T  0000:0
%        [1:1]       ON IF CALLED FROM PRNPBT/DISK.                           08255135 T  0000:0
%                                                                             08255140 T  0000:0
   BEGIN INTEGER U,V,I,J,J1,J2,S;                                             08255200 T  0000:0

STACK(F+2) = U
STACK(F+3) = V
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = J1
STACK(F+7) = J2
STACK(F+10) = S
                    REAL A,HDR,SEG0=S,F=J;                                   08255400 T  0000:0
STACK(F+11) = A
STACK(F+12) = HDR
STACK(F+10) = SEG0
STACK(F+5) = F
                    REAL PBT,PBD,PUD;                                        08255500 T  0000:0
STACK(F+13) = PBT
STACK(F+14) = PBD
STACK(F+15) = PUD
                    ARRAY D[*],SHEAT=D[*];                                   08255600 T  0000:0
STACK(F+16) = D
STACK(F+16) = SHEAT
                    LABEL TRYAGAIN,PRNPBT,DISK;                              08255700 T  0000:0
                    LABEL FOUND,FIREITUP,QUIT;                      %717-    08255800 P  0000:0
                    DEFINE MFID = (IF V=22 THEN PUD ELSE PBD)#;              08255900 T  0000:0
                    DEFINE STACURR = STATION[STA,[44:4],STA,[39:4]]#;        08256000 T  0000:0
                $ SET OMIT = SHAREDISK                                       08256190 T  0000:0
                    DEFINE SIXTY   = 60#;                                    08256200 T  0000:0
                $ SET OMIT = NOT SHAREDISK                                   08256210 T  0000:0
                $ SET OMIT = NOT RJE                                         08256390 T  0000:0
                %                                                            08256420 T  0000:0
                    SUBROUTINE LABELTHEPRINTER;                              08256430 T  0000:0
                    BEGIN LABELTABLE[V]:=Q&@21[1:43:5];                      08256440 T  0001:0
                        MULTITABLE[V]:=IF V=22 THEN PUD ELSE PBD;            08256450 T  0003:1
                    END;                                                     08256460 T  0006:2
                                                                                          08256440
                %                                                            08256470 T  0006:3
```

```
        PRT := "PRT     "; PUD := "PUD     "; PBD := "PBD     ";                    08256500 T  0006:3
$ SET OMIT = NOT(DATACOM AND RJE )                                                   08256699 T  0012:3
        IF Q≥(-15) THEN  %%% PB GIVEN; LOOK FOR LP,                                  08257000 T  0012:3
        BEGIN                                                                        08257100 T  0013:3
$ SET OMIT = NOT(DATACOM AND RJE )                                                   08257199 T  0014:1
            IF PNCH THEN IF LABELTABLE[V:=22]≠0 THEN V:=0 ELSE ELSE                  08257500 T  0014:1
            IF LABELTABLE[V+20]≠0 THEN                                               08257600 T  0022:0
            IF LABELTABLE[V+21]≠0 THEN V←0;                                          08258000 T  0024:0
            IF V≠0 THEN                 % WE HAVE AN OUTPUT UNIT                     08258200 T  0027:1
              IF Q>0 THEN               %    BACK-UP DISK                           08258400 T  0028:0
              BEGIN U:=18;                                                           08258600 T  0029:1
                   LABELTHEPRINTER;     % TO HOLD IT DURING DISK I/O-S,              08258700 T  0030:2
                   IF AUTOPRINT         % CHECK IF A PRNPBT WAS STARTED;             08258800 T  0032:0
$ SET OMIT = NOT RJE                    % IF SO, START THIS ONLY FOR PB,             08258990 T  0032:0
                   THEN                                                             08259200 T  0032:0
                     IF (A:=DIRECTORYSEARCH(MFID,Q,19))≠0 THEN                      08259225 T  0032:3
                     BEGIN IF M[A+4].[6:1] THEN% NOT FIRST TIME.                    08259250 T  0037:2
                               BEGIN                                                08259275 T  0040:0
$ SET OMIT = NOT SHAREDISK                                                          08259300 T  0040:2
                                    P(PNCH.[2:1]);     % SEE 08259625                08259375 T  0040:2
                               END ELSE             % FIRST TIME, MARK IT.         08259400 T  0041:1
                                                                                                    08259275
                               BEGIN M[A+4].[6:1]:=1;                               08259425 T  0041:1
                                    DISKWAIT(A.[CF],-30,A,[FF]);                    08259450 T  0045:0
                                    P(1);                                           08259475 T  0047:2
                               END;                                                 08259500 T  0047:3
                                                                                                    08259425
                               FORGETSPACE(A);                                      08259525 T  0047:3
$ SET OMIT = SHAREDISK                                                              08259550 T  0048:2
                               UNLOCKDIRECTORY;                                     08259575 T  0048:2
                                                                                                    08259575
                                                                                                    08259575
$ POP OMIT                                                                          08259600 T  0052:0
                                    IF P THEN ELSE GO QUIT;                         08259625 T  0052:0
                               END ELSE GO QUIT;                                    08259650 T  0052:2
                                                                                                    08259250
                          GO FIREITUP;                                              08259700 T  0052:2
                     END ELSE           % Q≤0, PB MT                      %717-    08259800 P  0054:0
                                                                                                    08258600
                      BEGIN RRRMECH←TWO(U←ABS(Q)) OR RRRMECH;                %717-    08259810 C  0054:0
                      LABELTABLE[U] ←                                        %717-    08259820 C  0057:0
                            PBT&TINU[V][6:30:18]&@21[1:43:5];                %717-    08259830 C  0057:2
                      MULTITABLE[V] ← PBT;                                   %717-    08259840 C  0060:2
                      LABELTABLE[V] ← PBT&TINU[U][6:30:18]&                  %717-    08259850 C  0061:3
                        @21[1:43:5];                                         %717-    08259860 C  0063:3
                      GO FIREITUP;                                           %717-    08259870 C  0065:1
                      END                                                    %717-    08259880 C  0065:3
                                                                                                    08259810
                ELSE GO QUIT;                   % V = 0, NO OUTPUT UNIT             08260000 T  0065:3
            END;                                                                    08260250 T  0065:3
                                                                                                    08257100
            BEGIN V:=ABS(Q);    % LP (OR PUNCH) GIVEN, LOOK FOR FILE,               08260500 T  0065:3
                 IF PBCOUNT≠0 THEN              % TRY FOR DISK                      08267000 T  0066:3
                 BEGIN D:=[M[SPACE(90)]]&90[8:38:10];                               08267500 T  0067:2
$ SET OMIT = SHAREDISK                                                              08267990 T  0071:3
                      LOCKDIRECTORY;                                                08268000 T  0071:3
                                                                                                    08268000
```

```
                                                                                                                    08268000
$ POP OMIT                                                                                          08268010 T  0078:1
                    A:=MFID;                                                                        08268500 T  0078:1
                    J1:=(A.[6:18] + A.[24:24]) MOD MODULUS;                                         08268600 T  0081:0
                    FOR J2:=0 STEP 1 UNTIL (MODULUS-1) DO                                           08268700 T  0083:3
                    BEGIN                                                                           08268750 T  0088:0
$ SET OMIT = NOT SHAREDISK                                                                          08268790 T  0088:0
                         J:=SCRAMBLE(J1,J2);                                                        08268900 T  0088:0
                         DO BEGIN DISKWAIT(-(D INX 30),SIXTY,J);                                    08268950 T  0095:0
                              FOR I:=30 STEP 3 UNTIL 87 DO                                          08269000 T  0097:1
                              IF (D[I] EQV A) = NOT 0 THEN                                          08269100 T  0099:0
                              IF D[I+1].[CF]=1 THEN                                                 08269200 T  0100:3
                              BEGIN DISKWAIT(-D.[CF],-30,D[I+2].[CF]);                              08269300 T  0103:1
                                   IF D[4].[1:3] ≠ 0 OR D[4].[6:1]                                  08269400 T  0107:2
$ SET OMIT = NOT(RJE AND DATACOM )                                                                  08269499 T  0109:1
$ SET OMIT = NOT(PACKETS)                                                                           08269509 T  0109:1
                                   OR LABELTABLE[IF V=20 THEN 21 ELSE                               08269510 T  0109:1
                                    IF V=21 THEN 20 ELSE 22].[6:24]                                 08269520 T  0112:1
                                     =D[I+1].[6:24]                                                 08269530 T  0114:2
$ POP OMIT                                                                                          08269531 T  0116:0
                                   OR (D[4].[16:20] OR D[9].[1:28])≠0                               08269600 T  0116:0
                                   THEN                                                             08269650 T  0119:2
$ SET OMIT = NOT SHAREDISK                                                                          08269690 T  0120:1
                                   ELSE                                                             08269750 T  0120:1
                                   BEGIN D[4].[6:1]:=1;                                             08269800 T  0120:3
                                        PBCOUNT:=PBCOUNT-1;                                         08269900 T  0123:3
                                        DISKWAIT(D.[CF],-30,D[I+2].[CF]);                           08270000 T  0125:0
$ SET OMIT = NOT SHAREDISK                                                                          08270040 T  0126:1
                                        U:=18;                                                      08270100 T  0128:1
                                        Q:=D[I+1];                                                  08270200 T  0129:1
                                        GO FOUND;                                                   08270300 T  0130:3
                                   END  END;                                                        08270350 T  0131:1
                                                                                                                08269800
                                                                                                                08269300
$ SET OMIT = NOT SHAREDISK                                                                          08270390 T  0133:2
                              END UNTIL (J:=D[32].[FF])=0;                                          08270450 T  0133:2
                                                                                                                08268950
$ SET OMIT = NOT SHAREDISK                                                                          08270490 T  0136:0
                         END;                                                                       08270550 T  0136:0
                                                                                                                08268750
   FOUND:                FORGETSPACE(D);                                                            08270600 T  0136:2
$ SET OMIT = SHAREDISK                                                                              08270640 T  0137:2
                         UNLOCKDIRECTORY;                                                           08270650 T  0137:2
                                                                                                                08270650
                                                                                                                08270650
$ POP OMIT                                                                                          08270660 T  0141:0
                    END SEARCHING FOR DISK;                                                         08270700 T  0141:0
                                                                                                                08267500
               END;                                                                                 08270725 T  0141:0
                                                                                                                08260500
   %                    IF WE HAVE BOTH AN INPUT FILE AND AN OUTPUT UNIT,                           08270740 T  0141:0
   %                    FIRE UP PRNPBT/DISK.                                                        08270745 T  0141:0
               IF U≠0 AND V≠0 THEN                                                                  08270750 T  0141:0
               BEGIN                                                                                08270800 T  0142:3
$ SET OMIT = NOT(DATACOM AND RJE )                                                                  08270819 T  0143:1
                    LABELTHEPRINTER;                                                                08271000 T  0143:1
   FIREITUP:                                                                                        08271750 T  0144:0
```

```
                A:=V&U[38:43:5]&PNCH[21:30:17];                                  08272000 T  0144:0
 $ SET OMIT = NOT RJF                                                            08272240 T  0146:3
                IF PNCH.[1:1] THEN P(A) ELSE                                     08273250 T  0146:3
                BEGIN                                                            08273500 T  0148:1
TRYAGAIN:                                                                        08273600 T  0150:0
                IF (HDR:=DIRECTORYSEARCH(P(PRNPBT),P(DISK),3)) # 0 THEN          08273750 T  0150:0
                    BEGIN                                                        08274000 T  0152:1
                    SHEAT := [MYF:=TYPEDSPACE(31,SHEETAREAV)]]&30[SIZE];         08274250 P  0152:3
                    M[F-2].[9:6] := 0; M[HDR INX NOT 1].[9:6]:=0;                08274260 T  0157:0
                    MOVE(30,F-1,F);                                              08274500 T  0163:3
                    SEG0 := TYPEDSPACE(30,SEGZEROAREAV);%              %167-     08275500 P  0165:3
                    M[SEG0-2].[AREAMIXF] := 0;%                        %167-     08275600 C  0168:0
                    DISKWAIT(-SEG0, 30, M[HDR INX 10]);                          08275750 T  0171:1
                    F.[FF] := HDR; % CORE ADDRESS OF HEADER                      08276000 T  0174:0
                    SHEAT[7] := SEG0;  % CORE ADDRESS OF SEGMENT ZERO            08276050 T  0175:1
                    SHEAT[0] := P(PRNPBT);                                       08276100 T  0176:2
                    SHEAT[1] := P(DISK);                                         08276150 T  0177:3
                    SHEAT[2] := 0 & PRNPBTCODE[5:45:3] & 2[8:38:10] &            08276200 T  0179:0
                                %PRIORITY=0,EXECUTE CODE                         08276203 T  0181:3
                              (PNCH.[2:1]=0)[4:47:1]; % SET IF NOT "PB"           08276205 T  0181:3
                    SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS     08276210 T  0184:1
                    SHEAT[19] := A;              % COMMON VALUE                  08276220 T  0186:2
                    SHEAT[20] := 4;              % CORE ESTIMATE                 08276230 T  0187:3
                    SHEAT[21] := 150;            % STACK SIZE                    08276240 T  0189:0
                                                                                 08276250 T  0190:1
                    STREAM(A:=0; S:=P(.SCHEDULEIDS));                            08276260 T  0190:1
                        BEGIN                                                    08276270 T  0191:2
                        SI:=S;                                                   08276280 T  0191:2
                        47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                     08276290 T  0191:3
                           IF SB THEN ELSE JUMP OUT);                            08276300 T  0192:3
                        DS:=SET; A:=TALLY;                                       08276310 T  0194:1
                        END STREAM STATEMENT;                                    08276320 T  0194:3
                                                                                          08276270
                                                                                 08276330 T  0195:0
                    I := P;                                                      08276340 T  0195:0
                    SHEAT[3].[8:10] := I;        % SCHEDULE NUMBER            08276350 T  0195:2
                    SHEAT[23] := (CLOCK + P(RTR)) DIV 60;                        08276360 T  0198:0
                    SHEAT[24] := MCP;                                  %131-     08276365 C  0200:1
 $ SET OMIT = NOT(DATACOM AND RJE)                                               08276370 T  0202:1
                    SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER         08276400 T  0202:1
                    STREAM(A, I:=I:=SPACE(11));                                  08276410 T  0204:0
                       BEGIN                                                     08276420 T  0207:0
                       DI:=DI+16;                                                08276430 T  0207:0
                       DS:=30LIT"CC EXECUTE PRNPBT/DISK;COMMON=";                08276440 T  0207:1
                       SI:=LOC A; DS:=8DEC;                                      08276450 T  0211:1
                       DS:=6LIT";END.←";                                         08276460 T  0211:3
                       END STREAM STATEMENT;                                     08276470 T  0212:3
                                                                                          08276420
                    M[I] := 0; M[I+1]:=10;                                       08276480 T  0213:0
                    SHEAT[6] := GETESPDISK & 10[18:33:15];                       08276490 T  0216:2
                    DISKWAIT(I, 11, SHEAT[6].[CF]);                              08276500 T  0218:2
                    FORGETSPACE(I);                                              08276510 T  0220:2
                    INDEPENDENTRUNNER(P(.SELECTRUN),F,160);                      08276520 T  0221:1
                    P(1);                                                        08276530 T  0222:2
                    END ELSE % IF IN DIRECTORY                                   08276540 T  0222:3
                                                                                          08274000
                    BEGIN                                                        08276550 T  0222:3
```

```
                    ENTERSYSFILE(3);
                    GO TRYAGAIN;
PRNPBT:::           "PRNPBT ";
  DISK:::           "DISK   ";
                    END;

                END;

                PRINTORPUNCHWAIT:=P;
            END ELSE


QUIT:     IF V NEQ 0 THEN
 $ SET OMIT = NOT(RJE AND DATACOM )
          LABELTABLE[V]:=MULTITABLE[V]:=0;
          END PRINTWAIT;%
```

```
08276560 T   0225:0
08276570 T   0225:3
08276580 T   0226:1
08276590 T   0228:0
08276600 T   0229:0
                    08276550
08277000 T   0229:0
                    08273500
08277500 T   0229:0
08278000 T   0229:2
                    08270800
08279000 T   0229:2
08280000 T   0229:2
08280009 T   0230:3
08280030 T   0230:3
08281000 T   0233:2
                    08255200
                SIZE= 0234 WORDS
```

```
                    PROCEDURE PRINTBACKUP(BUFF); VALUE BUFF; REAL BUFF;                    %P          08282000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00272
PRT(575) = PRINTBACKUP
                    %                                                                                  08282100 T  0000:0
                    %   THIS PROCEDURE HANDLES THE PB MESSAGE, MAKING THE NECESSARY CHECKS             08282110 T  0000:0
                    %   AND THEN CALLING PRINTORPUNCHWAIT. THE SYNTAX OF THE MESSAGE IS:               08282120 T  0000:0
                    %   <PB MSG> ::= PB<INPUT FILE><PB SPECS>                                          08282140 T  0000:0
                    %     <INPUT FILE> ::= <TAPE UNIT> / <DISK FILE NUMBER>                            08282150 T  0000:0
                    %     <PB SPECS> ::= <PB ELEMENT> / <PB ELEMENT><PB SPECS> / <EMPTY>               08282160 T  0000:0
                    %     <PB ELEMENT> ::= P / =<NUMBER OF COPIES> / #<STARTING FILE NUMBER>           08282170 T  0000:0
                    %                                                                                  08282180 T  0000:0
                        BEGIN REAL U,I,COPY,MS,STA,B=BUFF;                                             08283000 T  0000:0
STACK(F+1) = U
STACK(F+2) = I
STACK(F+3) = COPY
STACK(F+4) = MS
STACK(F+5) = STA
STACK(F-1) = B
                    $ SET OMIT = NOT (DATACOM AND DCSPO)                                           08283400 T  0000:0
                            LABEL OK,BAD,SPIT;                                                     08284000 T  0000:0
                    $ SET OMIT = NOT (DATACOM AND DCSPO)                                           08284450 T  0000:0
                            STREAM(PCPY:=1, NUMB:=1, N:=1, CPY:=-0: B:=BUFF);                      08285000 T  0000:0
                            BEGIN SI+B; DI+LOC N;                                          %P      08286000 T  0003:2
                            L:  IF SC=" " THEN BEGIN SI+SI+1; GO TO L END;                 %P      08287000 T  0004:0
                                                                                                                 08287000
                                IF SC<"0" THEN BEGIN DS+5 LIT"+0000"; DS+3 CHR END ELSE    %P      08288000 T  0005:0
                                                                                                                 08288000
                                BEGIN B:=SI;                                                       08289000 T  0007:0
                                     4(IF SC<"0" THEN JUMP OUT; TALLY+TALLY+1; SI+SI+1);           08289500 T  0007:1
                                     SI:=B; B:=TALLY; DI:=DI+5; DI:=DI-B;                          08290000 T  0009:1
                                     DS+B CHR;                                             %P      08290500 T  0010:2
                                END;                                                               08291000 T  0011:0
                                                                                                                 08289000
                        LL:  IF SC=" " THEN BEGIN SI:=SI+1; GO TO LL END;                          08291025 T  0011:0
                                                                                                                 08291025
                             IF SC="=" THEN BEGIN DI:=LOC CPY; GO TO CNT END;                      08291050 T  0012:0
                                                                                                                 08291050
                             IF SC="#" THEN                                                        08291075 T  0013:0
                             BEGIN DI:=LOC NUMB;                                                   08291100 T  0013:2
                        CNT:      SI:=SI+1; B:=SI; IF SC=" " THEN GO TO CNT;TALLY:=0;            08291125 P  0013:3
                                  3(IF SC < "0" THEN JUMP OUT;                                     08291150 T  0015:1
                                    IF SC > "9" THEN JUMP OUT;                                     08291175 T  0016:2
                                    TALLY:=TALLY+1; SI:=SI+1);                                     08291200 T  0017:2
                                  SI:=B; B:=TALLY; DS:=B OCT;                                      08291225 T  0018:1
                                  GO TO LL;                                                        08291250 T  0019:1
                             END;                                                                  08291275 T  0019:2
                                                                                                                 08291100
                             IF SC="P" THEN                                                        08291300 T  0019:2
                             BEGIN TALLY:=0; PCPY:=TALLY; SI:=SI+1;                                08291325 T  0020:0
                                  5(IF SC=ALPHA THEN IF SC<"0" THEN SI:=SI+1 ELSE                  08291350 T  0020:3
                                    JUMP OUT ELSE JUMP OUT);                                       08291375 T  0022:2
                                  GO TO LL;                                                        08291400 T  0024:0
                             END;                                                                  08291425 T  0024:1
                                                                                                                 08291325
                        END;                                                                       08291450 T  0024:1
                                                                                                                 08286000
                        COPY:=(COPY:=P)&(NOT COPY = NOT 0)[31:47:1];                               08291460 T  0024:2
```

```
%
%       BACK UP TAPE. CHECK THE LABEL THEN CALL PRINTORPUNCHWAIT.
%
        IF (U:=P) < 0 THEN
        BEGIN COPY:=COPY&(P(XCH)-1)[32:40:8];
              IF NOT MTXIN(I,U,B) THEN
              IF (STA:=MULTITABLE[U]#"PBTMCP " OR STA) AND
                MULTITABLE[U]#"PUTMCP " THEN
                BEGIN STREAM(BUFF); DS:=19 LIT" NOT A BACKUP TAPE←";
                      GO TO SPIT;
                END

              ELSE
              IF PRINTORPUNCHWAIT(-U, STA&COPY[30:31:17] OR M) THEN
                GO TO OK ELSE BEGIN MS:=-1; GO TO BAD END

              ELSE GO TO SPIT;
        END;
%
%       BACK UP DISK. SET FIRST REEL NUMBER. IF COPIES OR REEL NUMBER
%            GIVEN, DIAL IN "P" BIT. ELSE LEAVE IT OFF TO PRINT ENTIRE
%            THING. CHECK FOR THE FILE, THEN CALL PRINTORPUNCHWAIT.
%
        STREAM(I:=P; U:=[U]);
        BEGIN SI:=LOC I; DI:=DI+5;
              DS:=3 DEC;
        END;

        I:=P-1;
        IF (COPY OR I).[CF]=0 THEN P(DEL) ELSE
          COPY:=COPY&P(XCH)[39:47:1];
        BUFF:=BUFF.[15:15]-1;
        IF (I:=DIRECTORYSEARCH("PBD     ",U,5))=0 THEN
        IF (I:=DIRECTORYSEARCH("PUD     ",U,5))=0 THEN GO TO BAD
             ELSE STA:=STA OR 1;
        P(M[I+4]);
        FORGETSPACE(I);
        IF P.[2:1] THEN BEGIN MS:=2; GO TO BAD END;

        IF PBCOUNT LSS 1 THEN PBCOUNT:=1;
        IF PRINTORPUNCHWAIT(U, STA&COPY[30:31:17] OR M) THEN
OK:       FORGETSPACE(BUFF)
        ELSE
        BEGIN MS:=1;
BAD:         STREAM(MS, X:=MS<0, U:=IF P(DUP) THEN TINU[U] ELSE U,
                   BUFF:=BUFF.[CF]);
             BEGIN DS:=8 LIT" NULL PB";
                   SI:=LOC U; CI:=CI+X; GO TO DK;
                   SI:=SI+5; DS:=3 CHR; GO TO LL;
             DK:   SI:=SI+1; DS:=4 CHR;
                   BUFF:=DI; DI:=DI-4; DS:=3 FILL; DI:=BUFF;
             LL:   DS:=2 LIT"=(";
                   CI:=CI+MS; GO TO LO; GO TO L1;
                   DS:= 6 LIT"IN USE"; GO TO L;
             L1:   DS:=14 LIT"NO OUTPUT UNIT"; GO TO L;
             LO:   DS:=11 LIT"NOT ON DISK";
```

```
08291470 T  0027:2
08291475 T  0027:2
08291480 T  0027:2
08291500 T  0027:2
08291750 T  0028:2
08292000 T  0031:1
08292500 T  0032:3
08293000 T  0035:1
08293500 T  0036:2
08294000 T  0040:3
08294500 T  0044:0
                    08293500
08295000 T  0044:0
08295200 T  0044:0
08295600 T  0047:1
                    08295600
08295800 T  0049:2
08296000 T  0049:2
                    08291750
08296160 T  0049:2
08296170 T  0049:2
08296180 T  0049:2
08296190 T  0049:2
08296200 T  0049:2
08296225 T  0049:2
08296250 T  0050:2
08296275 T  0051:0
08296300 T  0051:1
                    08296250
08296325 T  0051:2
08296350 T  0052:2
08296375 T  0055:0
08296400 T  0057:1
08296600 T  0059:0
08296800 T  0061:1
08297000 T  0064:0
08297200 T  0065:3
08297300 T  0067:1
08297400 T  0068:0
                    08297400
08297600 T  0073:0
08298000 T  0075:0
08298200 T  0077:2
08298400 T  0078:1
08298600 T  0078:3
08298800 T  0080:0
08299000 T  0083:1
08299200 T  0084:1
08299400 T  0085:2
08299600 T  0086:2
08299800 T  0087:1
08300000 T  0087:3
08300200 T  0088:3
08300400 T  0089:1
08300600 T  0090:1
08300800 T  0091:2
08301000 T  0093:3
```

```
                    L :  DS:= 2 LIT")•";                                    08301200 T  0095:2
                    END;                                                    08301400 T  0096:0
                                                                                        08299200
SPIT:               SPOUT(BUFF                                              08301600 T  0096:1
 $ SET OMIT = NOT (DATACOM AND DCSPO)                                       08301650 T  0096:1
                        );                                                  08301800 T  0096:1
          END;                                                              08302000 T  0097:2
                                                                                        08298600
    END OF PB KEYBOARD MESSAGE HANDLER;                                     08302500 T  0097:2
                                                                                        08283000
                                                                                SIZE= 0098 WORDS
```

```
                    SAVE PROCEDURE INITIALIZE;   FORWARD;                                                    08303000 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00640
PRT(576) = INITIALIZE
                    REAL ACTDATE=INITIALIZE;                                                                08303100 T  0000:0
PRT(576) = ACTDATE
                    SAVE REAL PROCEDURE COREND;   FORWARD;                                                  08303200 T  0000:0
                                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00640
PRT(577) = COREND
                    REAL WEEKDAY=COREND;                                                                    08303300 T  0000:0
PRT(577) = WEEKDAY
                    PROCEDURE TIMEOUT (B); VALUE B; REAL B;%                                                08305000 T  0000:0
                                                                                                   START OF REL SEGMENT; DISK ADDRESS = 00276
PRT(600) = TIMEOUT
                         BEGIN INTEGER M,H,C;%                                                              08306000 T  0000:0
STACK(F+1) = M
STACK(F+2) = H
STACK(F+3) = C

                              C ←XCLOCK/3600;%                                                              08307000 T  0000:0
                              M ← C MOD 60;%                                                                08308000 T  0002:0
                              H ← C DIV 60;%                                                                08309000 T  0003:1
                              STREAM(H,M,B);%                                                               08310000 T  0004:2
                                   BEGIN DS ← 9 LIT " TIME IS ";%                                           08311000 T  0005:3
                                        SI ← LOC H; DS ← 2 DEC; DS ← 2 DEC;%                                08312000 T  0007:1
                                        DS ← LIT ":";%                                                      08313000 T  0008:0
                                   END;%                                                                    08314000 T  0008:2
                                                                                                                     08311000
                              SPOUT(B INX MEMORY[B-1]);                                                     08315000 T  0008:3
                         END;%                                                                              08316000 T  0011:3
                                                                                                                     08306000
                                                                                                                SIZE= 0013 WORDS
```

```
                PROCEDURE GIMEDATE(B,DT); VALUE B,DT; REAL B,DT;                                    08317000 T  000:0
                                                                                START OF REL SEGMENT; DISK ADDRESS = 00277
                    %% PARAMETER USE IS:                                                            08317100 T  000:0
                       %% B=OUTPUT AREA FOR MESSAGE OR DATE                                         08317200 T  000:0
                       %%DT=0 RECONVERT ACTDATE,WEEKDAY THEN SPOUT TIME MSG                        08317300 T  000:0
                       %% DT>0 SPOUT TIME MSG ONLY                                                  08317400 T  000:0
                       %% DT<0 CONVERT MMDDYY USING DT (ACTDATE,WEEKDAY NOT CHANGED)                08317500 T  000:0
                         BEGIN  REAL M,D,Y,NCV,NMG;                                                 08318000 T  000:0
STACK(F+1) = M
STACK(F+2) = D
STACK(F+3) = Y
STACK(F+4) = NCV
STACK(F+5) = NMG
                                REAL SUBROUTINE DAY;                                               08318100 T  000:0
                                BEGIN;STREAM(M;X+0,Y+0,Z+0);                                       08318200 T  000:0
                                      BEGIN DI+LOC X; DS+24 LIT"000+0%1,1Y2G2V3D3T4A4 5>";         08318300 T  000:3
                                            SI+LOC X; SI+SI+M; SI+SI+M;                            08318400 T  000:1
                                            DI+LOC M; DI+DI+6; DS+2 CHR;                           08318500 T  000:2
                                      END;                                                         08318600 T  000:1
                                                                                                                 08318300
                                      DAY+P;                                                       08318700 T  000:2
                                END DAY;                                                           08318800 T  000:3
                                                                                                                 08318200
                                LABEL DAYS;                                                        08318900 T  000:0
                                LABEL ON;;%                                                        08319000 T  000:0
                                IF NOT (NCV+(DT>0))  THEN   % NOT PRINT ONLY                       08319700 T  001:1
                                BEGIN                                                              08319900 T  001:3
                                STREAM(DATE+IF (NMG+DT,[1:1]) THEN DT ELSE DATE,R+[Y]);            08320000 T  001:1
                                     BEGIN SI + LOC DATE; SI + SI+3;%                              08321000 T  001:3
                                          DS+2 OCT; DI+DI-16; DS+3 OCT;                            08322000 T  001:1
                                     END;%                                                         08323000 T  001:0
                                                                                                                 08321000
                                IF Y MOD 4 = 0 AND Y ≠ 0 THEN%                                     08324000 T  001:1
                                     BEGIN IF D = 60 THEN%                                         08325000 T  001:2
                                                    BEGIN M+2; GO ON END;                          08326000 T  002:3
                                                                                                                 08326000
                                          IF D > 60 THEN D +D-1;%                                  08327000 T  002:2
                                     END;%                                                         08328000 T  002:5
                                                                                                                 08325000
                                FOR M+1 STEP 1 UNTIL 11 DO                                         08329000 T  002:5
                                     IF DAY≥D THEN GO ON;                                          08330000 T  002:0
                           ON;  M+M-1;                                                             08331000 T  003:1
                                D+D-DAY;                                                           08332000 T  003:2
                                IF M<2 THEN P(Y-1,M+11) ELSE P(Y,M-1);                             08332100 T  003:3
                                P(26,X,2,-,10,IDV,D,+,XCH,P(DUP),[36:10],+,+,7,RDV,5,ISN);         08332200 T  003:0
                                :: P(,DAYS,+,LOD);                                                 08332300 T  004:2
                                M+M+1;                                                             08332400 T  004:3
                                END ELSE P(WEEKDAY);                                               08332500 T  004:5
                                                                                                                 08319900
                                STREAM(M+[M],NMG,NCV,MDY+[ACTDATE],B,DATE,DW+[WEEKDAY]);           08333000 T  004:3
                                     BEGIN  NMG(JUMP OUT TO NOMSG);                                08334000 T  004:8
                                            SI+LOC M; SI+SI-16;                                    08334100 T  004:1
                                            NCV(SI+SI+2; JUMP OUT TO NOCNV);                       08334300 T  004:3
                                            DS+WDS; SI+SI-6;                                       08334500 T  005:1
                          NOCNV:            DI+B; DS+9 LIT" DATE IS "; DS+6 CHR;                   08334700 T  005:3
                                            DS+5 LIT"DAY, "; B+DI; NCV(JUMP OUT TO NULCV);         08334900 T  005:3
                          NOMSG:            SI+M; NMG(DI+B; JUMP OUT TO NULMS);                    08335000 T  005:1
```

```
                    DI←MDY;                                                  08335200 T  0058:0
NULMS:              DS←4 DEC; DS←2 DEC; DS←2 DEC;                            08335400 T  0058:1
                    NMG(JUMP OUT TO OXIT); DI←B;                             08335600 T  0059:0
NULCV:              SI←MDY; SI←SI+2;                                         08335800 T  0060:2
                    DS←2 CHR; 2(DS←LIT "/"; DS←2 CHR);                       08336000 T  0061:0
                    DS:=2 LIT"=("; SI:=LOC DATE;                             08336500 T  0062:2
                    SI:=SI+3; DS:=5 CHR; DS:=2 LIT")←";                      08337000 T  0063:1
                    SI:=B;                                                   08337500 T  0064:1
                    3(DI ← B; DS ← FILL; SI ← SI+3; B ←SI);%                 08338000 T  0064:2
OXIT:           END;                                                         08339000 T  0066:0
                                                                                              08334000
          IF DT≥0 THEN                                                       08339500 T  0066:1
          IF NOT NMG THEN SPOUT(B INX MEMORY[B-1]);                          08340000 T  0067:0
          P(XIT);                                                            08340100 T  0071:2
DAYS:::   "   MON","  TUES","WEDNES"," THURS","   FRI"," SATUR",            08340200 T  0071:3
          "   SUN";                                                          08340300 T  0078:0
     END:%                                                                   08341000 T  0079:0
                                                                                              08318000
                                                                                    SIZE= 0080 WORDS
```

```
                DEFINE DATEOUT(DATEOUT1)=GIMEDATE(DATEOUT1,0)#; %CHANGE DATE & SPOUT IT          08342000 T  0000:0
                 PROCEDURE SETDATE(BUFF); VALUE BUFF; REAL BUFF;%                                08343000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00280
PRT(601) = SETDATE
                      BEGIN REAL DY,MN,YR; INTEGER D=DY; REAL B,T=MN;                             08344000 T  0000:0
STACK(F+1) = DY
STACK(F+2) = MN
STACK(F+3) = YR
STACK(F+1) = D
STACK(F+4) = B
STACK(F+2) = T

                       REAL SUBROUTINE C;                                                         08344100 T  0000:0
                       BEGIN;STREAM(C+0;B+[B]);                                                   08344200 T  0001:0
                            BEGIN%                                                                08345000 T  0002:1
                                 SI + B; SI + SI+5; SI + SC;%                                     08346000 T  0002:1
                            L:   IF SC < "0" THEN%                                                08347000 T  0003:0
                                      BEGIN IF SC = "-" THEN GO TO X;%                            08348000 T  0003:2
                                            SI + SI+1; GO TO L;%                                  08349000 T  0004:1
                                      END;%                                                       08350000 T  0004:3
                                                                                                                08348000
                            K:   IF SC ≥ "0" THEN%                                                08351000 T  0004:3
                                      BEGIN TALLY + TALLY+1;%                                     08352000 T  0005:1
                                            SI + SI+1; GO TO K END;%                              08353000 T  0005:2
                                                                                                                08352000
                                 DI + B; B + SI; SI + LOC B; DS + WDS;%                           08354000 T  0006:0
                                 SI + B; B + TALLY; DI + LOC C;%                                  08355000 T  0007:0
                                 SI + SI-B; DS + B OCT;%                                          08356000 T  0007:3
                            X;END;%                                                               08357000 T  0008:3
                                                                                                                08345000
                             C+P;                                                                 08358000 T  0009:0
                       END C;                                                                     08358100 T  0009:1
                                                                                                                08344200
                            B + BUFF;%                                                            08359000 T  0009:2
                            MN+C; DY+C; YR+C;                                                     08360000 T  0011:3
                            BUFF + BUFF,[15:15]=1;%                                               08361000 T  0017:2
                            IF MN > 0 AND MN ≤ 12 AND%                                            08362000 T  0019:1
                                 DY > 0 AND DY ≤ 31 AND%                                          08363000 T  0021:0
                                 YR > 0 THEN%                                                     08364000 T  0023:0
                            BEGIN;STREAM(M+MN-1;X+0,Y+0,Z+0);                                     08365000 T  0024:0
                                  BEGIN DI+LOC X; DS+24 LIT"000+0%1,1Y2G2V3D3T4A4 5>";            08365100 T  0026:3
                                        SI+LOC X; SI+SI+M; SI+SI+M;                               08365200 T  0030:1
                                        DI+LOC M; DI+DI+6; DS+2 CHR;                              08365300 T  0031:2
                                  END;                                                            08365400 T  0032:1
                                                                                                                08365100
                            DY+P+DY;                                                              08366000 T  0032:2
                            IF YR MOD 4 = 0 AND MN > 2 AND(YR MOD 100 ≠ 0 OR%                     08367000 T  0033:2
                                  YR MOD 400 = 0) THEN%                                           08368000 T  0037:0
                                 DY + DY+1;%                                                      08369000 T  0038:3
                            D + YR MOD 100 × 1000+DY;%                                            08370000 T  0040:2
                            STREAM(D,A+[DATE]);%                                                  08371000 T  0042:3
                                 BEGIN SI + LOC D; DS + 8 DEC END;%                               08372000 T  0043:3
                                                                                                                08372000
                            CHANGEDATE(BUFF);%                                                    08373000 T  0044:2
                            END ELSE SPOUT(BUFF INX MEMORY[BUFF -1]);                             08374000 T  0045:1
                                                                                                                08365000
                END;%                                                                             08375000 T  0048:3
                                                                                                                08344000
```

SIZE= 0049 WORDS

```
                PROCEDURE CHANGEDATE(BUFF); VALUE BUFF; REAL BUFF;%                                    08376000 T  0000;0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00282
                    BEGIN REAL B,C,D,T;%                                                               08377000 T  0000;0
STACK(F+1) = B
STACK(F+2) = C
STACK(F+3) = D
STACK(F+4) = T
                        SLEEP([TOGLE],HOLDMASK);                                                       08378000 T  0000;0
                        LOCKTOG(HOLDMASK);                                                             08379000 T  0002;2
                                                                                                                    08379000
                        B ← SPACE(30);%                                                                08380000 T  0006;0
                        DISKWAIT(-B,-30,DIRECTORYTOP);                                                 08381000 T  0008;1
                        D:= M[B+1];%                                                                   08381100 T  0010;0
                        M[B+1] ← DATE;%                                                                08383000 T  0012;0
                        M[B+18]:=XCLOCK;                                                               08383100 T  0014;0
                        DISKIO(T,B-1,-30,DIRECTORYTOP);                                                08384000 T  0016;0
                        IF BUFF≠0 THEN                                                                 08384100 T  0018;1
                        BEGIN%                                                                         08384200 T  0019;0
                        DATEOUT (BUFF);%                                                               08385000 T  0019;2
                        C := TYPEDSPACE(5,MAINTBUFFAREAV);%                              %167-         08385100 P  0020;2
                        M[C  ]:= M[C+2]:= 0;%                                                          08385200 T  0022;3
                        M[C+3]:= D;%                                                                   08385300 T  0026;0
                        STREAM(DATE,A:=C+1); BEGIN SI:=LOC DATE; DS:=8 OCT; END;%                      08385400 T  0028;0
                                                                                                                    08385400
                        LINKUP(17,C);%                                                                 08385500 T  0030;1
                        END;%                                                                          08385600 T  0031;1
                                                                                                                    08384200
                        SLEEP([T],IOMASK);%                                                            08386000 T  0031;1
                        FORGETSPACE(B);%                                                               08387000 T  0032;3
                        UNLOCKTOG(HOLDMASK);                                                           08388000 T  0033;2
                                                                                                                    08388000
                    END;%                                                                              08389000 T  0037;0
                                                                                                                    08377000
                                                                                                  SIZE= 0038 WORDS
```

```
                    PROCEDURE SETIME(BUFF); VALUE BUFF; REAL BUFF;%                                  08390000 T  0001:0
                                                                                          START OF REL SEGMENT; DISK ADDRESS = 00284
PRT(602) = SETIME
                         BEGIN REAL B=BUFF,T;%                                                       08391000 T  0001:0

STACK(F-1) = B
STACK(F+1) = T
                              REAL I,R;%                                                             08392000 T  0001:0

STACK(F+2) = I
STACK(F+3) = R
                              LABEL EXIT;%                                                           08393000 T  0001:0
                              REAL CLOCK=XCLOCK;%                                                    08394000 T  0001:0
PRT(171) = CLOCK
                              INTEGER CLCK=CLOCK;;%                                                  08395000 T  0001:0
PRT(171) = CLCK
                              T ← -1;%                                                               08396000 T  0001:3
                              STREAM(B,T←[T]);%                                                      08397000 T  0011:3
                                   BEGIN SI ← B;%                                                    08398000 T  0022:3
                                   L:   IF SC = " " THEN%                                            08399000 T  0033:0
                                             BEGIN SI ← SI+1; GO TO L END;%                          08400000 T  0033:2
                                                                                                                  08400000
                                        IF SC < "0" THEN GO TO X;%                                   08401000 T  0044:0
                                   K:     IF SC ≥ "0" THEN%                                          08402000 T  0044:3
                                             BEGIN SI ← SI+1; TALLY ← TALLY+1;%                      08403000 T  0055:1
                                                   GO TO K END;%                                     08404000 T  0055:3
                                                                                                                  08403000
                                        B ← TALLY; SI ← SI-B; DS ← B OCT;%                           08405000 T  0066:0
                                   X:%                                                               08406000 T  0077:1
                                   END;%                                                             08407000 T  0077:1
                                                                                                                  08398000
                              BUFF ← BUFF.[15:15]-1;%                                                08408000 T  0072:2
                              IF T ≥ 0 AND T DIV 100 < 24 AND T MOD 100 < 60 THEN%                   08409000 T  0099:1
                                   BEGIN R := TYPEDSPACE(5,MAINTBUFFAREAV);%        %167-          08410000 P  0013:0
                                        M[R+2]:= XCLOCK;%                                            08410100 T  0015:3
                                        CLCK:= (T DIV 100 × 60 + T MOD 100)×3600;%                   08410200 T  0017:3
                                        CLOCK ← (CLOCK OR @77)+1;%                                   08411000 T  0021:0
                                        TIMEOUT (BUFF);%                                             08412000 T  0022:3
                                        M[R]:= M[R+3]:= 0;%                                          08412100 T  0023:2
                                        STREAM(DATE,A:=R+1);%                                        08412200 T  0026:3
                                        BEGIN SI:=LOC DATE; DS:=8 OCT; END;%                         08412300 T  0028:1
                                                                                                                  08412300
                                        LINKUP(17,R);%                                               08412400 T  0029:0
                                        GO TO EXIT;%                                                 08413000 T  0030:0
                                   END;%                                                             08414000 T  0032:0
                                                                                                                  08410000
                         SPOUT(BUFF INX MEMORY[BUFF-1]);                                             08415000 T  0032:0
                    EXIT:%                                                                           08416000 T  0035:0
                    END;%                                                                            08417000 T  0035:0
                                                                                                                  08391000
                                                                                                        SIZE= 0036 WORDS
```

```
                REAL PROCEDURE FORMESS(BUFF,H1); VALUE BUFF,H1; REAL BUFF,H1;                    08418000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00286
PRT(603) = FORMESS
                    BEGIN REAL B,H,U,M1;                                                         08418500 T  0000:0
STACK(F+2) = B
STACK(F+3) = H
STACK(F+4) = U
STACK(F+5) = M1
                        INTEGER I;
STACK(F+6) = I                                                                                   08418700 T  0000:0

                        LABEL AGAIN,EXIT,AWAY;                                                   08419000 T  0000:0
                        M1:=M[BUFF,[15:15]-2];                                                   08419100 T  0000:0
                        STREAM(BUFF:);                                                           08419200 T  0004:0
                        BEGIN SI:=BUFF;                                                          08419300 T  0005:0
                          L: IF SC=" " THEN BEGIN SI:=SI+1; GO TO L END;                         08419400 T  0005:1
                                                                                                                  08419400
                            BUFF:=SI;                                                            08419500 T  0006:1
                        END;                                                                     08419600 T  0006:2
                                                                                                                  08419300
                        BUFF:=P;                                                                 08419700 T  0006:3
                AGAIN:  U:=FORMESS:=UNITIN(TINU,BUFF);                                           08420000 T  0007:1
                        IF U≤31 THEN BEGIN SLEEP([TOGLE],STATUSMASK);                            08421000 T  0009:2
                            IF LABELTABLE[U] < 0 THEN%                                           08422000 T  0012:1
                            BEGIN STREAM(A:=TINU[U],B:=B:=SPACE(5));                             08424000 T  0013:1
                                    BEGIN SI ← LOC A; SI ← SI + 5; DS ← 3 CHR;%                  08425000 T  0017:0
                                    DS:=24LIT" IN USE(TO BE READIED)←";                          08426000 T  0017:3
                                END;%                                                            08427000 T  0021:0
                                                                                                                  08425000
                                SAVEWORD := SAVEWORD AND NOT TWO(U);                             08427100 T  0021:1
                                SPOUT(B);                                                        08428000 T  0023:1
                                IF H1 THEN GO AWAY ELSE GO TO EXIT;                              08429000 T  0024:2
                            END;                                                                 08429500 T  0025:3
                                                                                                                  08424000
                            LABELTABLE[U]:=@114&H1[1:47:1];                                      08430000 T  0025:3
                            MULTITABLE[U] ← 0;%                                                  08431000 T  0028:0
                            I ← TWO(U);%                                                         08432000 T  0029:1
                            IF H1 THEN B:=NOT 0 ELSE                                             08433000 T  0030:2
                            BEGIN B:=NOT I; H:=I:=0;                                             08434000 T  0032:1
                                IF U=23 THEN H:=P(.READERA);                                     08434100 T  0035:0
                                IF U=24 THEN H:=P(.READERB);                                     08434200 T  0037:0
                                IF H≠0 THEN                                                      08434300 T  0039:0
                                BEGIN UNITCODE[U-23]:=-0;                                        08434400 T  0039:3
                                    IF (*H).[CF]≠0 THEN                                          08434500 T  0042:1
                                    BEGIN FORGETSPACE(*H-2);                                     08434600 T  0043:3
                                        M[H]:=0;                                                 08434700 T  0045:3
                                    END;                                                         08434800 T  0047:1
                                                                                                                  08434600
                                END;                                                             08434900 T  0047:1
                                                                                                                  08434400
                            END;                                                                 08434950 T  0047:1
                                                                                                                  08434000
                            READY ← READY AND B OR I;%                                           08435000 T  0047:1
                            RRRMECH ← RRRMECH AND B OR I;%                                       08436000 T  0049:0
                        SAVEWORD ← SAVEWORD AND B OR I;%                                         08437000 T  0050:3
                        END;                                                                     08437050 T  0052:2
                                                                                                                  08421000
EXIT:       IF NOT H1 THEN                                                                       08437100 T  0052:2
```

```
                BEGIN IF U GTR 31 THEN                                                  08437150 T  0053:0
                     BEGIN STREAM(BUFF,B:=B:=SPACE(5));                                 08437200 T  0054:1
                          BEGIN DS:=10 LIT"INV KBD RY";                                 08437250 T  0057:3
                               SI:=BUFF; DS:=3 CHR;                                     08437300 T  0059:1
                               DS:="LIT"←";                                             08437350 T  0059:3
                          END;                                                          08437400 T  0060:1
                                                                                                    08437250
                          SPOUT(B INX M1);                                              08437450 T  0060:2
                     END;                                                               08437500 T  0062:1
                                                                                                    08437200
                     STREAM(OK:=0,BUFF:);                                               08437550 T  0062:1
                     BEGIN SI:=BUFF;                                                    08437600 T  0063:2
                          3(IF SC=" " THEN JUMP OUT;                                    08437650 T  0063:3
                            IF SC="," THEN JUMP OUT;                                    08437700 T  0065:0
                            IF SC="←" THEN JUMP OUT TO L3;                              08437750 T  0066:0
                            SI:=SI+1);                                                  08437800 T  0067:0
                     L1:    IF SC=" " THEN                                             08437850 T  0067:2
                     L2:    BEGIN SI:=SI+1; GO TO L1 END;                              08437900 T  0068:0
                                                                                                    08437900
                          IF SC="," THEN GO TO L2;                                      08437950 T  0068:2
                          BUFF:=SI;                                                     08438000 T  0069:1
                          IF SC≠"←" THEN TALLY:=1;                                      08438050 T  0069:2
                     L3:  OK:=TALLY;                                                    08438100 T  0070:1
                     END;                                                               08438150 T  0070:2
                                                                                                    08437600
                     BUFF:=P;                                                           08438200 T  0070:3
                     IF P THEN GO AGAIN;                                                08438250 T  0071:1
AWAY:                FORMFSS:=-1;                                                       08438300 T  0072:0
                END;                                                                    08438350 T  0073:0
                                                                                                    08437150
                I:=SPACE(30);                                                %146-      08438400 C  0073:0
                DISKWAIT(-I,30,DIRECTORYTOP-SYSNO);                          %146-      08438410 C  0075:1
                M[I+29]:=SAVEWORD;                                           %146-      08438420 C  0077:1
                DISKWAIT( I,30,DIRECTORYTOP-SYSNO);                          %146-      08438430 C  0079:1
                FORGETSPACE(I);                                              %146-      08438440 C  0081:0
                END;                                                                    08438500 T  0081:3
                                                                                                    08418500
                                                                                                SIZE= 0083 WORDS
```

```
                PROCEDURE SUSTATUS(A,DDD,B); VALUE A,DDD,B; REAL A,B; ARRAY DDD[*];          08438900 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00289
PRT(604) = SUSTATUS
                                        FORWARD;                                          08438910 T  0000:0
                PROCEDURE OUTPUTLABEL(B); VALUE B; REAL B;%                               08439000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00289
PRT(605) = OUTPUTLABEL
                BEGIN REAL BU=B,U,T,A;%                                                   08440000 T  0000:0
STACK(F-1) = BU
STACK(F+1) = U
STACK(F+2) = T
STACK(F+3) = A
                        REAL G,Q;%                                                        08441000 T  0000:0
STACK(F+4) = G
STACK(F+5) = Q
                            REAL TUSTA,TEMP;                                              08441050 T  0000:0
STACK(F+6) = TUSTA
STACK(F+7) = TEMP
                        BOOLEAN SCRTOG;                                                   08441100 T  0000:0
STACK(F+10) = SCRTOG
                        LABEL EXIT;%                                                      08442000 T  0000:0
                        SUBROUTINE DOIT;%                                                 08443000 T  0000:0
                            BEGIN; STREAM(A,TINU[U]:B);%                                  08444000 T  0001:0
                                BEGIN SI ← LOC A; SI ← SI+5; DS ← LIT" ";%                08445000 T  0002:2
                                      DS ← 3 CHR; DS ← LIT " "; A ← DI END;%              08446000 T  0003:2
                                                                                                    08445000
                                A ← P; T ← LABELTABLE[U];%                                08447000 T  0004:3
                                 IF U LSS 16 THEN TEMP:=PRNTABLE[U].[30:18];              08447100 T  0006:1
                                 IF T=0 THEN                                              08448000 T  0009:0
                                 STREAM(B:=TEMP,V:=(U LSS 16),A);                         08448050 T  0009:3
                                 BEGIN SI:=LOC V;SI:=SI+7;                                08448100 T  0012:0
                                 IF SC NEQ "0" THEN BEGIN SI:=LOC B;DS:=5DEC END;         08448110 T  0012:2
                                                                                                    08448110
                                                    DS:=9LIT" SCRATCH←" END               08448150 T  0013:2
                                                                                                    08448100
ELSE IF T = @114 OR T = @214 THEN%                                                        08449000 T  0015:0
      BEGIN                                                                               08450000 T  0017:2
      STREAM(SAV:=((TWO(U) AND SAVEWORD) NEQ 0),A);                                       08450100 T  0018:0
         BEGIN                                                                            08450200 T  0020:2
         DS:=10LIT"NOT READY←";                                                           08450300 T  0020:2
         SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                                               08450400 T  0022:0
         END                                                                              08450500 T  0024:1
                                                                                                    08450200
      END                                                                                 08450600 T  0024:1
                                                                                                    08450000
 ELSE IF ABS(T)=@314 THEN                                                                 08451000 T  0024:2
 STREAM(B:=TEMP,V:=(U LSS 16),A);                                                         08451100 T  0026:0
 BEGIN SI:=LOC V; SI:=SI+7;                                                               08451200 T  0028:1
 IF SC NEQ "0" THEN BEGIN SI:=LOC B;DS:=5DEC END;                                         08451210 T  0028:3
                                                                                                    08451210
      DS:=11 LIT " UNLABELED←";                                                           08452000 T  0029:3
 END                                                                                      08452100 T  0031:2
                                                                                                    08451200
ELSE BEGIN;%                                                                              08453000 T  0031:2
     STREAM(K:=T<0; TEMP, V:=U<16, A);                                                    08454000 T  0032:1
     BEGIN V(SI:=LOC TEMP; DS:=5 DEC; DS:=LIT" ");                                        08454500 T  0035:0
          CI:=CI+K; GO TO LAB;                                                            08455000 T  0036:3
```

```
          DS:=6 LIT"IN USE"; GO TO L;                                    08455500 T  0037:2
     LAB: DS:=7 LIT"LABELED";                                            08456000 T  0038:3
     L:   DS:=LIT" "; K:=DI;                                             08457000 T  0040:0
          END;                                                           08458000 T  0040:3
                                                                                     08454500
A ← P;%
IF (NT1 ← RDCTABLE[U],[8:6]) ≠ 0 THEN%                                   08459000 T  0041:0
IF JARROW[NT1] ≠ 0 THEN%                                                 08460000 T  0041:2
     BEGIN;STREAM(J←JARROW[NT1]:NT1,A);%                                 08461000 T  0043:2
          BEGIN DS ← 3 LIT "BY "; SI ← J;%                               08462000 T  0045:0
               SI ← SI+1; DS ← 7 CHR;%                                   08463000 T  0047:1
               DS ← LIT "/"; SI ← SI+1;%                                 08464000 T  0048:1
               DS ← 7 CHR; DS ← LIT "=";%                                08465000 T  0048:3
               SI←LOC NT1; DS←2DEC;                                      08466000 T  0049:2
               DS ← LIT ":"; J ← DI;%                                    08467000 T  0050:1
               DI←DI-3; DS←FILL;                                         08468000 T  0050:3
          END;%                                                          08468500 T  0051:2
                                                                         08469000 T  0052:0
          A ← P;%                                                                    08463000
     END ELSE ELSE                                                       08470000 T  0052:1
                                                                         08471000 T  0052:3
IF T<0 AND (U=23 OR U=24) THEN                                                      08462000
   BEGIN                                                                 08471010 T  0053:1
   STREAM(S:=0 ! A);                                                     08471020 T  0056:2
     BEGIN                                                               08471030 T  0057:0
     DS:=22LIT"BY AUTO LOAD CONTROL: ";                                  08471040 T  0058:1
   S:=DI;                                                                08471050 T  0058:1
     END;                                                                08471060 T  0061:1
                                                                         08471070 T  0061:2
                                                                                     08471040
   A:=P;                                                                 08471080 T  0061:3
   END ELSE                                                              08471090 T  0062:1
                                                                                     08471020
IF U GEQ 20 AND U LEQ 22 THEN                                            08471100 T  0062:1
IF LABELTABLE[U],[1:5]=@21 THEN                                          08471105 T  0064:2
     BEGIN STREAM(S:=0:A);                                               08471110 T  0066:2
          BEGIN                                                          08471120 T  0068:1
               DS:=13 LIT "BY SCHEDULED ";                               08471130 T  0068:1
               DS:=13 LIT "PRNPBT/DISK: ";                               08471140 T  0070:1
               S:=DI;                                                    08471150 T  0072:1
          END;                                                           08471160 T  0072:2
                                                                                     08471120
          A:=P;                                                          08471170 T  0072:3
     END;                                                                08471180 T  0073:1
                                                                                     08471110
STREAM(S←0:K←MULTITABLE[U],T,R←RDCTABLE[U],                              08472000 T  0073:1
     [14:10],D←RDCTABLE[U],[24:17],C←RDCTABLE[U],%                       08473000 T  0075:0
     [41:7],A); BEGIN SI ← LOC K;%                                       08474000 T  0077:0
     2(SI ← SI+1; DS ← 7 CHR; DS ← LIT " ");%                            08475000 T  0078:2
     DS ← 3 DEC; DS ← LIT " ";%                                          08476000 T  0080:0
     DS ← 5 DEC; DS ← LIT " ";%                                          08477000 T  0080:3
     DS ← 2 DEC; DS ← LIT "←";%                                          08478000 T  0081:2
     S←DI;                                                               08478500 T  0082:1
     END;                                                                08478600 T  0082:2
                                                                                     08474000
A←P;                                                                     08478700 T  0082:3
IF U≥32 THEN IF CIDROW[U   -32]≠0 THEN                                   08478800 T  0083:1
     STREAM(DK←CIDTABLE[U   -32,2],A);                                   08478900 T  0086:0
```

```
                                BEGIN                                                    08479000 T  0088:3
                                DI←DI-1;                                                 08479100 T  0088:3
$ SET OMIT = NOT(PACKETS)                                                                08479109 T  0089:0
                                 DS:=5 LIT ",PKT ";                                      08479110 T  0089:0
$ POP OMIT                                                                               08479111 T  0090:0
$ SET OMIT = PACKETS                                                                     08479199 T  0090:0
                                SI←LOC DK; SI←SI+1;                                      08479300 T  0090:0
                                DS←7 CHR;                                                08479400 T  0090:2
                                END;                                                     08479500 T  0090:3
                                                                                                     08479000
                           END;                                                          08479600 T  0091:0
                                                                                                     08453000
                      SPOUT(B INX TUSTA);                                                08480000 T  0091:0
                      B ← 0;%                                                            08481000 T  0092:3
                 END;%                                                                   08482000 T  0093:2
                                                                                                     08444000
           TUSTA←M[B,[15:15]-2];                                                         08482050 T  0093:3
           IF (U ← UNITIN(TINU,B))≤ PSEUDOMAXT  THEN                                     08483000 T  0098:2
                BEGIN B ← B,[15:15]-1;%                                                  08484000 T  0100:3
                      IF (U OR 1)=19 THEN SUSTATUS(B INX TUSTA,0,U) ELSE                 08484500 T  0103:0
                      DOIT;%                                                             08485000 T  0106:2
                      GO TO EXIT;%                                                       08486000 T  0108:0
                END;%                                                                    08487000 T  0108:2
                                                                                                     08484000
$ SET OMIT = SHAREDISK                                                                   08487099 T  0108:2
          SCRTOG ← U = PSEUDOMAXT + 1;                                                   08487100 T  0108:2
$ POP OMIT                                                                               08487101 T  0110:1
$ SET OMIT = NOT(SHAREDISK)                                                              08487199 T  0110:1
          STREAM(A←0:B);%                                                                08488000 T  0110:1
                BEGIN SI ← B;%                                                           08489000 T  0111:2
                L:    IF SC = " " THEN%                                                  08490000 T  0111:3
                           BEGIN SI ← SI+1; GO TO L END;%                                08491000 T  0112:1
                                                                                                     08491000
                     DI ← LOC A; DI ← DI+6; DS ← 2 CHR;%                                 08492000 T  0112:3
                END;%                                                                    08493000 T  0113:2
                                                                                                     08489000
           Q ← P; B ← B,[15:15]-1;%                                                      08494000 T  0113:3
           FOR U ← 0 STEP 1 UNTIL PSEUDOMAXT DO                                          08495000 T  0116:0
                IF TINU[U].[30:12] = Q THEN%                                             08496000 T  0117:0
                IF (G ← LABELTABLE[U])≠0 AND G≠@114 AND G≠@214                           08497000 T  0118:2
                     AND NOT SCRTOG OR G=0 AND SCRTOG THEN                               08497100 T  0122:0
                     BEGIN IF B = 0 THEN B ← SPACE(10);%                                 08498000 T  0124:3
                          DOIT;%                                                         08499000 T  0128:3
                     END;%                                                               08500000 T  0130:0
                                                                                                     08498000
           IF B ≠ 0 THEN%                                                                08501000 T  0132:1
                BEGIN;STREAM(Q,B);%                                                      08502000 T  0133:0
                          BEGIN DS ← 6 LIT " NULL "%                                     08503000 T  0134:2
                               SI ← LOC Q; SI ← SI+6; DS ← 2 CHR;%                       08504000 T  0135:2
                               DS ← 7 LIT " TABLE←"%                                     08505000 T  0136:1
                          END;%                                                          08506000 T  0137:2
                                                                                                     08503000
                     SPOUT(B INX TUSTA);                                                 08507000 T  0137:3
                END;%                                                                    08508000 T  0139:2
                                                                                                     08502000
EXIT: END;%                                                                              08509000 T  0139:2
                                                                                                     08440000
```

SIZE= 0140 WORDS

```
                    PROCEDURE    TIMEUSED(B, X);                                                    08525000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00294
PRT(606) = TIMEUSED
                        VALUE      B, X;                                                            08526000 T  0000:0
                        REAL       B, X;                                                            08527000 T  0000:0
                        BEGIN INTEGER  T, H, M, S, CPT, IOT, ET;                                    08528000 T  0000:0
STACK(F+1) = T
STACK(F+2) = H
STACK(F+3) = M
STACK(F+4) = S
STACK(F+5) = CPT
STACK(F+6) = IOT
STACK(F+7) = ET
                    $ SET OMIT = NOT(PACKETS)                                                       08528499 T  0000:0
                            DEFINE UNITNO = PSEUDOMIX[X]#;                                          08528500 T  0000:0
                    $ POP OMIT                                                                      08528501 T  0000:0
                            REAL SUBROUTINE CONVERTIME;                                             08529000 T  0000:0
                            BEGIN S ← T-60×(T ← T DIV 60);                                          08530000 T  0001:0
                                  M ← T-60×(H ← T DIV 60);                                          08531000 T  0003:3
                                  STREAM(R←0; A←[H]);                                               08532000 T  0006:2
                                  BEGIN DI←LOC R; DI←DI+2; SI←A; 3(DS←2 DEC) END;                   08533000 T  0007:3
                                                                                                                  08533000
                                  CONVERTIME ← POLISH                                               08533100 T  0009:2
                            END;                                                                    08533200 T  0009:2
                                                                                                                  08530000
                            T ← JAR[X,3]+PROCTIME[X];                                               08533400 T  0010:0
                    $ SET OMIT = NEWLOGGING                                                         08533499 T  0014:0
                            IF X=P2MIX OR X=P1MIX THEN                                              08533500 T  0014:0
                    $ POP OMIT                                                                      08533501 T  0015:3
                    $ SET OMIT = NOT(NEWLOGGING)                                                    08533599 T  0015:3
                            T ← T+CLOCK+P(RTR);                                                     08533700 T  0015:3
                            T ← T/60;  CPT ← CONVERTIME;                                            08534000 T  0018:0
                            T ← JAR[X,4]+IOTIME[X];                                                 08535000 T  0020:2
                            WHILE T<0 DO T ← T+CLOCK+P(RTR);                                        08536000 T  0022:3
                            T ← T/60;  IOT ← CONVERTIME;                                            08537000 T  0026:1
                            T ← ((CLOCK+P(RTR))/60)-NFO[(X-1)×NDX+2],[1:17];                        08538000 T  0029:2
                            ET ← CONVERTIME;                                                        08538500 T  0034:0
                            STREAM(J←JARROW[X],X,T←[CPT],B);                                        08540000 T  0035:2
                            BEGIN DS←10 LIT " TIME FOR "; SI←J; SI←SI+1; DS←7 CHR;                  08540100 T  0037:1
                                  SI←SI+1; DS←LIT "/"; DS←7 CHR; DS←LIT"=";                         08540200 T  0039:2
                                  SI←LOC X; DS←2 DEC; X←DI; DI←DI-2; DS←FILL;                       08540300 T  0041:0
                                  DI←X; DS←8 LIT " IS: CP="; SI←T; SI←SI+2;                         08541000 T  0042:1
                                  3(DS←LIT ":"; DS←2 CHR);                                          08542000 T  0044:1
                                  X←DI; DI←DI-9; DS←8 FILL; DI←X;                                   08543000 T  0045:2
                                  DS←5 LIT ", IO="; SI←SI+2;                                        08544000 T  0046:2
                                  3(DS←LIT ":"; DS←2 CHR);                                          08544100 T  0047:3
                                  X←DI; DI←DI-9; DS←8 FILL; DI←X;                                   08544200 T  0049:0
                                  DS←3 LIT " IN"; SI←SI+2;                                          08544300 T  0050:0
                                  3(DS←LIT ":"; DS←2 CHR); DS←LIT "←";                              08544400 T  0051:0
                                  DI←DI-10; DS←8 FILL                                               08544500 T  0052:3
                            END;                                                                    08544600 T  0053:1
                                                                                                                  08540100
                            SPOUTER(B INX MEMORY[B-1],UNITNO,1);                                    08544700 T  0053:2
                                  COMMENT MESSAGE PRESENTLY 72 CHARACTERS LONG;                     08544800 T  0056:3
                    END;                                                                            08545000 T  0056:3
                                                                                                                  08528000
                                                                                                  SIZE= 0057 WORDS
```

```
                REAL PROCEDURE ANVIL(IL,Z); VALUE IL,Z; REAL IL,Z;%                                    08546000 T  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00296
PRT(607) = ANVIL
                    BEGIN REAL B=Z,U=+1;%                                                              08547000 T  0000:0

STACK(F-1) = B
STACK(F+1) = U
                    REAL ZZ;                                                                           08547050 T  0000:0

STACK(F+2) = ZZ
                    LABEL EXIT;                                                                        08547100 T  0000:0
                    ZZ:=Z;                                                                             08547200 T  0000:0
                    NAMEID(U,ZZ);                                                                      08547300 T  0001:1
                    NAMEID(U,ZZ);                                                                      08547400 T  0002:1
                    IF U="/      " THEN                                                                08547500 T  0003:1
                    BEGIN U:=Z.[15:15]; GO EXIT END ELSE                                               08547600 T  0004:0
                                                                                                                    08547600
                         IF (U ← UNITIN(TINU,B)) ≤ PSEUDOMAXT THEN                                     08548000 T  0008:0
                         BEGIN%                                                                        08549000 T  0010:3
                         IF LABELTABLE[U] = @114 OR LABELTABLE[U] = @214 THEN%                         08550000 T  0011:1
                              BEGIN                                                                    08551000 T  0013:2
                              STREAM(A:=TINU[U],SAV:=((TWO(U) AND SAVEWORD) ≠ 0 ),                     08551100 T  0014:0
                                   X:=Z.[15:15]-1);                                                    08551200 T  0016:2
                                 BEGIN                                                                08551300 T  0018:0
                                 SI:=LOC A; SI:=SI+5; DS:=3CHR;                                       08552000 T  0018:0
                                 DS:=11LIT" NOT READY←";                                              08553000 T  0018:3
                                 SAV(DI:=DI-1; DS:=8LIT"(SAVED)←");                                   08554000 T  0020:2
                                 END;                                                                 08554100 T  0022:3
                                                                                                                    08551300
                                   U ← PSEUDOMAXT + 1;                                                08555000 T  0023:0
                              END ELSE                                                                 08556000 T  0024:1
                                                                                                                    08551000
                    END ELSE                                                                           08557000 T  0024:1
                    BEGIN;STREAM(A←TINU[U],X←Z.[15:15]-1);%                                            08558000 T  0025:3
                              BEGIN SI ← LOC A; SI ← SI+5;%                                            08559000 T  0028:2
                                   DS ← 3 CHR; DS ← 8 LIT " IN USE←";%                                 08560000 T  0029:0
                              END;%                                                                    08561000 T  0030:2
                                                                                                                    08559000
                         U ← PSEUDOMAXT + 1;                                                           08562000 T  0030:3
                    END;%                                                                              08563000 T  0032:0
                                                                                                                    08558000
                    IF U ≤ PSEUDOMAXT THEN                                                             08564000 T  0032:0
                         LABELTABLE[U] ← -(IF IL THEN *P(DUP) ELSE @314);%                             08565000 T  0032:3
                    EXIT: END; END;                                                                    08566000 T  0036:2
                                                                                                                    08549000
                                                                                                                    08547000
                                                                                                  SIZE= 0037 WORDS
```

```
                PROCEDURE LOGOUT(A); VALUE A; REAL A;                                                    08568000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00298
                BEGIN REAL RCW=+0;                                                                       08568100 T  0000:0
STACK(F+0) = RCW
                      REAL MSCW=-2;                                                                      08568125 T  0000:0
STACK(F-2) = MSCW
                      INTEGER I=RCW+1;                                                                   08568150 T  0000:0
STACK(F+1) = I
                      REAL J=I+1, L=J+1;                  % L MUST BE LAST DECLARATION.                   08568200 T  0000:0
STACK(F+2) = J
STACK(F+3) = L
                      LABEL EXIT;                                                                        08568300 T  0000:0
                      P(0,0,SPACE(335));          % INITIALIZES L                                        08568600 T  0000:0
                      IF (J:=DIRECTORYSEARCH("SYSTEM ","LOG     ",4))=0 THEN                             08568700 T  0002:1
                      BEGIN;                                                                             08568800 T  0004:2
                           STREAM(L);                                                                    08568900 T  0005:0
                           BEGIN DS:=10 LIT "-NULL LOG+" END;                                            08569000 T  0005:3
                                                                                                                      08569000
                           GO TO EXIT;                                                                   08569100 T  0007:2
                      END;                                                                               08569200 T  0010:0
                                                                                                                      08568800
                      IF LOGFREE GTR 0 THEN SLEEP([LOGFREE],-0);                                         08569300 T  0010:0
                      LOGFREE:=ABS(LOGFREE);                                                             08569400 T  0013:0
                 $ SET OMIT = NOT(SHAREDISK)                                                             08569499 T  0014:0
                      MOVE(30,J INX 0,L);                                                                08569600 T  0014:0
                      M[L+10] + GETUSERDISK(-(M[L+8]+M[L+8]+10));  % GET XTRA TEN                        08569700 T  0016:0
                      DO BEGIN                                     % TO MAKE COPY                      08569800 T  0022:2
                           DISKWAIT (-L-31,300,M[J+10]+I);         % SIMPLER                            08569900 T  0022:2
                           DISKWAIT ( L+31,300,M[L+10]+I);                                               08569910 T  0026:1
                      END UNTIL (I+I+10)≥M[J+8];                                                         08569920 T  0029:3
                                                                                                                      08569800
                      LOGFREE + M[J+10];                                                                 08570000 T  0033:1
                      J:=J INX 0;                                                                        08570300 T  0035:1
                      M[J]:=M[J+2]:=M[J+3]:=0;                                                           08570400 T  0036:2
                      M[J+1]:=M[J+8]x6;                                                                  08570500 T  0041:2
                      M[J+4]:="DISKLOG";                                                                 08570600 T  0045:1
                      M[J+5]:=4;                                                                         08570700 T  0047:1
                      DISKWAIT(J,30,LOGFREE);                                                            08570800 T  0049:1
                 $ SET OMIT = NOT(SHAREDISK)                                                             08570849 T  0050:2
                      LOGFREE+NABS(LOGFREE);                                                             08570870 T  0050:2
                      P(DIRECTORYSEARCH(-"SYSTEM ","LOG     ",14),DEL);                                  08570880 T  0051:2
                      IF HOLDFREE=0 THEN SLEEP([TOGLE],HOLDMASK);                                        08571000 T  0053:1
                      LOCKTOG(HOLDMASK);                                                                 08571100 T  0056:2
                                                                                                                      08571100
                      DISKWAIT(-J,-30,DIRECTORYTOP);                                                     08571200 T  0060:0
                      I:=(M[J+20].[8:10]+1) MOD 1000;                                                    08571300 T  0061:3
                      M[J+20]:=(*P(DUP))&I[8:38:10];                                                     08571400 T  0065:1
                      DISKWAIT(J,-30,DIRECTORYTOP);                                                      08571500 T  0068:2
                      UNLOCKTOG(HOLDMASK);                                                               08571600 T  0070:0
                                                                                                                      08571600
                      STREAM(J+[ACTDATE],D+[1]);                                                         08571800 T  0073:2
                      BEGIN SI:=D;DS:=8 DEC;DI:=DI-7;SI:=J;                                              08571900 T  0074:2
                           SI+SI+2; DS+4 CHR;                                                            08572000 T  0075:2
                      END;                                                                               08572300 T  0076:0
                                                                                                                      08571900
                      FORGETSPACE(J);                                                                    08572400 T  0076:1
                      M[L+4]:=(*P(DUP))&0[1:43:5]&1[11:47:1]&0[12:44:4];                                 08572500 T  0077:0
```

```
    M[L+1]←XCLOCK←P(RTR);                                                    08572510 T  0082:1
    STREAM(DATE,A←0,B←L+1);                                                  08572520 T  0084:3
    BEGIN SI← LOC DATE;DI←LOC A;DS←8 OCT;SI←LOC A;                           08572530 T  0086:2
          SI←SI+5;DI←B;DI←DI+1;DS←3 CHR; END;                                08572540 T  0087:2
                                                                                        08572530
    ENTERUSERFILE(=I,"SYSLOG ",L=1);                                         08572600 T  0088:3
    STREAM(I,L);                                                             08572700 T  0091:0
    BEGIN DS:=21 LIT"**** NEW LOG FILE IS ";SI:=LOC I;SI:=SI+1;              08572800 T  0092:0
       DS:=7 CHR;DS:=8 LIT"/SYSLOG←" ;                                       08572900 T  0095:2
    END;                                                                     08573000 T  0097:0
                                                                                        08572800
EXIT:                                                                        08573100 T  0097:1
    SPOUT(L);                                                                08573200 T  0097:1
    IF A THEN KILL([MSCW]);                                                  08573300 T  0098:2
END;                                                                         08573400 T  0100:0
                                                                                        08568100
                                                                                SIZE= 0105 WORDS
```

```
                    PROCEDURE SAVETHEUNIT(B); VALUE B; REAL B;%                                  08575000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00302
PRT(610) = SAVETHEUNIT
                        BEGIN REAL A=B,T,U,I,M1;                                                  08576000 T  0000:0
STACK(F-1) = A
STACK(F+1) = T
STACK(F+2) = U
STACK(F+3) = I
STACK(F+4) = M1
                            LABEL AGAIN,EXIT;                                                     08576100 T  0000:0
                            M1:=M[B,[15:15]-2];                                                   08577000 T  0000:0
                            STREAM(B:);                                                           08577100 T  0003:2
                            BEGIN SI:=B;                                                          08577200 T  0004:2
                              L: IF SC=" " THEN BEGIN SI:=SI+1; GO TO L END;                      08577300 T  0004:3
                                                                                                                08577300
                                B:=SI;                                                            08577400 T  0005:3
                            END;                                                                  08577500 T  0006:0
                                                                                                                08577200
                            B:=P;                                                                 08577600 T  0006:1
                    AGAIN:  T:=SPACE(10);                                                         08577700 T  0006:3
                            IF (U:=UNITIN(T,NU,A)) GTR 31 THEN                                    08578000 T  0009:0
                            STREAM(A,T);                                                          08578100 T  0011:1
                            BEGIN DS:=10 LIT"INV KBD SV";                                         08578200 T  0012:3
                                 SI:=A; DS:=3 CHR;                                                08578300 T  0014:1
                                 DS:=LIT"←";                                                      08578400 T  0014:3
                            END ELSE                                                              08578500 T  0015:1
                                                                                                                08578200
                                 BEGIN I ← TWO(U);%                                               08579000 T  0015:2
                                      SLEEP([TOGLE],STATUSMASK);                                  08580000 T  0017:1
                                      IF LABELTABLE[U] ≥ 0 THEN%                                  08581000 T  0018:3
                                           BEGIN LABELTABLE[U] ← @114;%                           08582000 T  0019:3
                                                MULTITABLE[U]←RDCTABLE[U]←0;                      08582100 T  0021:2
                                                RRRMECH ← RRRMECH OR I;%                          08583000 T  0023:3
                                                READY ← READY OR I;%                              08584000 T  0025:0
                                                SAVEWORD := SAVEWORD OR I;                        08584100 T  0026:1
                                                I ← "      ";%                                    08585000 T  0027:2
                                           END%                                                   08586000 T  0028:1
                                                                                                                08582000
                                      ELSE BEGIN SAVEWORD ← SAVEWORD OR I;%                       08587000 T  0028:1
                                                I ← " TO BE";%                                    08588000 T  0031:1
                                           END;%                                                  08589000 T  0032:0
                                                                                                                08587000
                                      STREAM(A←TINU[U],I,T);%                                     08590000 T  0032:0
                                           BEGIN DS ← LIT " ";%                                   08591000 T  0033:2
                                                SI ← LOC A; SI ← SI+5; DS ← 3 CHR;%               08592000 T  0034:0
                                                SI ← SI+2; DS ← 6 CHR;%                           08593000 T  0034:3
                                                DS ← 7 LIT " SAVED←";%                            08594000 T  0035:1
                                           END;%                                                  08595000 T  0036:2
                                                                                                                08591000
                                 END;%                                                            08596000 T  0036:3
                                                                                                                08579000
                            SPOUT(T INX M1);                                                      08597000 T  0036:3
                            STREAM(OK:=0,A:);                                                     08597050 T  0038:2
                            BEGIN SI:=A;                                                          08597100 T  0039:3
                                 3(IF SC=" " THEN JUMP OUT;                                       08597150 T  0040:0
                                   IF SC="," THEN JUMP OUT;                                       08597200 T  0041:1
                                   IF SC="←" THEN JUMP OUT TO L3;                                 08597250 T  0042:1
```

```
            SI:=SI+1);                                                                  08597300 T  0043:1
      L1:   IF SC=" " THEN                                                              08597350 T  0043:3
      L2:   BEGIN SI:=SI+1; GO TO L1 END;                                               08597400 T  0044:1
                                                                                                    08597400
            IF SC="," THEN GO TO L2;                                                    08597450 T  0044:3
            A:=SI;                                                                      08597500 T  0045:2
            IF SC≠"." THEN TALLY:=1;                                                    08597550 T  0045:3
      L3:   OK:=TALLY;                                                                  08597600 T  0046:2
      END;                                                                              08597650 T  0046:3
                                                                                                    08597100
      A:=P;                                                                             08597700 T  0047:0
      IF P THEN GO AGAIN;                                                               08597750 T  0047:2
      T:=SPACE(30);                                                        %146-        08597800 C  0048:1
      DISKWAIT(-T,30,DIRECTORYTOP-SYSNO);                                  %146-        08597810 C  0050:2
      M[T+29]:=SAVEWORD;                                                   %146-        08597820 C  0052:2
      DISKWAIT( T,30,DIRECTORYTOP-SYSNO);                                  %146-        08597830 C  0054:2
      FORGETSPACE(T);                                                      %146-        08597840 C  0056:1
END;%                                                                                   08598000 T  0057:0
                                                                                                    08576000
                                                                                      SIZE= 0059 WORDS
```

```
                BOOLEAN PROCEDURE WHYSLEEP(MASK); VALUE MASK; REAL MASK;                                  08599000 T  0000:0
                                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00304
                   BEGIN                                                                                 08600000 T  0000:0
                   REAL A, B;                                                                            08601000 T  0000:0
STACK(F+2) = A
STACK(F+3) = B

                   IF REPLY[P1MIX]=VWY THEN                                                              08602000 T  0000:0
                      BEGIN                                                                              08603000 T  0001:3
                      B:=SPACE(KEYMSGSZ);                                                                08604000 T  0002:1
                      DISKWAIT(=B,KEYMSGSZ,MESSAGETABLE[2],[22:26]);                                     08604100 T  0005:1
                      STREAM(B,MASK,T:=0,0:=0,D:=0,A:=A:=SPACE(4));                                      08605000 T  0008:1
                         BEGIN                                                                           08606000 T  0012:1
                         SI:=LOC MASK;                                                                   08607000 T  0012:1
                         8(IF SC="0" THEN GO TO NEXT;                                                    08608000 T  0012:2
                           IF SC=VWY THEN                                                                08609000 T  0013:2
                              BEGIN                                                                      08610000 T  0014:0
                              DI:=A; DS:=3LIT" DS"; A:=DI; GO TO NEXT;                                   08611000 T  0014:0
                              END;                                                                       08612000 T  0015:2
                                                                                                                     08610000
                           T:=SI; DI:=LOC 0; DI:=DI+7; DS:=CHR;                                          08613000 T  0015:2
                           SI:=LOC 0; DI:=LOC D; DI:=DI+6; DS:=2DEC;                                     08614000 T  0016:2
                           SI:=B;                                                                        08615000 T  0017:2
                        R: SI:=SI+6; DI:=DI-2;                                                           08616000 T  0017:3
                           IF SC="*" THEN % END OF FIRST PART OF TABLE                                   08617000 T  0018:1
                              BEGIN                                                                      08617500 T  0018:3
                              SI:=T; GO TO NEXT;                                                         08618000 T  0018:3
                              END;                                                                       08618500 T  0019:1
                                                                                                                     08617500
                           IF 2SC NEQ DC THEN GO TO R;                                                   08619000 T  0019:1
                           SI:=SI-6; DI:=A; DS:=LIT" "; DS:=2CHR; A:=DI; SI:=T;                          08619500 T  0020:0
                      NEXT: SI:=SI+1);                                                                   08620000 T  0021:3
                         DI:=A; DS:=LIT"+";                                                              08620500 T  0022:1
                         END STREAM STATEMENT;                                                           08621000 T  0023:0
                                                                                                                     08606000
                      SPOUT(A);                                                                          08621500 T  0023:1
                      FORGETSPACE(B);                                                                    08621600 T  0024:2
                      END % IF "WY"                                                                      08622000 T  0025:1
                                                                                                                     08603000
                   ELSE WHYSLEEP:=TRUE;                                                                  08622500 T  0025:1
                   END PROCEDURE WHYSLEEP;                                                               08623000 T  0026:2
                                                                                                                     08600000
                                                                                                                SIZE= 0027 WORDS
```

```
                PROCEDURE CHANGEOPTION(BUFF,RS);%                                                    08624000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00305
PRT(611) = CHANGEOPTION
                VALUE BUFF,RS;REAL BUFF,RS;%                                                         08625000 T  0000:0
                BEGIN   REAL B,T,OP,BUS,MASK,OPTER;                                                  08626000 T  0000:0
STACK(F+1) = B
STACK(F+2) = T
STACK(F+3) = OP
STACK(F+4) = BUS
STACK(F+5) = MASK
STACK(F+6) = OPTER
                        SLEEP([TOGLE],HOLDMASK);                                                     08627000 T  0000:0
                        LOCKTOG(HOLDMASK);                                                           08628000 T  0003:0
                                                                                                                 08628000
                        BUS ← BUFF.[15:15]=1; B ← SPACE(30);%                                        08629000 T  0006:2
                        DISKIO(T,1=B,=30,DIRECTORYTOP=SYSNO);                                        08630000 T  0010:2
                        OPTER ← SPACE(OPTIONSZ);                                                     08631000 T  0013:1
                        DISKWAIT(=OPTER,OPTIONSZ,MESSAGETABLE[0],[22:26]);                           08631100 T  0016:1
                STREAM(BUFF,T←0,OPTER,R←[OP]);%                                                      08632000 T  0019:1
                        BEGIN%                                                                       08633000 T  0020:3
                        L0:  SI←BUFF;                                          %535-                 08634000 P  0020:3
                        L1:  IF SC=" " THEN BEGIN SI←SI+1; GO TO L1; END;      %535-                 08635000 P  0021:0
                                                                                                                 08635000
                             IF SC<"0" THEN                                    %535-                 08636000 P  0022:0
                             IF SC≠"←" THEN                                    %535-                 08637000 P  0022:2
                                  BEGIN TALLY←0; T←TALLY; DI←LOC T;            %535-                 08638000 P  0023:0
                                  8(IF SC=" " THEN JUMP OUT ELSE               %535-                 08639000 P  0023:3
                                    IF SC="←" THEN JUMP OUT ELSE               %535-                 08640000 P  0025:1
                                    IF SC≥"0" THEN JUMP OUT ELSE DS←CHR);      %535-                 08641000 P  0026:2
                                  BUFF←SI; SI←OPTER;                           %535-                 08642000 P  0028:1
                                  63(DI←LOC T;                                 %535-                 08643000 P  0028:3
                                     IF 8 SC=DC THEN JUMP OUT TO L2 ELSE       %535-                 08644000 P  0029:1
                                     IF SC="←" THEN JUMP OUT TO L0 ELSE TALLY←TALLY+1);                  08645000 P  0030:2
                                  GO TO L3;                                    %535-                 08646000 P  0032:1
                        L2:       IF SC="←" THEN GO TO L0;                     %535-                 08647000 P  0032:2
                                  END ELSE                                     %535-                 08648000 P  0033:1
                                                                                                                 08638000
                        L3:                TALLY←48 ELSE                       %535-                 08649000 P  0033:2
                                  BEGIN DI←LOC T; SI←SI+1;                     %535-                 08650000 P  0034:0
                                  IF SC<"0" THEN BEGIN SI←SI-1; DS←1 OCT; END  %535-                 08651000 P  0034:2
                                                                                                                 08651000
                                            ELSE BEGIN SI←SI-1; DS←2 OCT; END; %535-                 08652000 P  0035:2
                                                                                                                 08652000
                                  TALLY←47; T(TALLY←TALLY+63);                 %535-                 08653000 P  0036:1
                                  END;                                         %535-                 08654000 P  0037:2
                                                                                                                 08650000
                             T←TALLY; SI←LOC T; DI←R; DS←WDS;                  %535-                 08655000 P  0037:2
                FND;%                                                                                08657000 T  0038:2
                                                                                                                 08633000
                        IF OP<47 THEN                                                                08658000 T  0038:3
                             BEGIN;STREAM(A ← IF RS THEN " RESET" ELSE "   SET",%                     08659000 T  0039:2
                                  0←OPTER INX OP,OP ← 47-OP,BUS);%                                   08660000 T  0042:0
                                  BEGIN DS ← LIT " "; SI ← LOC OP; DS ← 2 DEC;%                      08661000 T  0044:0
                                       DS ← LIT " "; SI ← 0;%                                        08662000 T  0045:0
                                       8(IF SC=0 THEN JUMP OUT TO L; DS←CHR);%                       08663000 T  0045:3
                                  L:   SI ← LOC A; SI ← SI+2; DS ← 6 CHR;%                           08664000 T  0047:2
                                       DS ← LIT"←";%                                                 08665000 T  0048:1
```

```
                    END;%                                                                    08666000 T  0048:3
                                                                                                         08661000
                    MASK←TWO(OP);%                                                           08667000 T  0049:0
                    M[BUS-1],[9:9]:=0;                                                       08667100 T  0050:1
                END;%                                                                        08668000 T  0053:2
                                                                                                         08659000
            SPOUT(BUS INX M[BUS-1]);                                                         08669000 T  0053:2
        SLEEP([T],IOMASK);                                                                   08670000 T  0056:2
        M[B]←OPTION←IF RS THEN OPTION AND NOT MASK ELSE OPTION OR MASK;                      08671000 T  0058:0
        DISKWAIT(B,-30,DIRECTORYTOP-SYSNO);                                                  08673000 T  0061:1
        FORGETSPACE(OPTER);%                                                                 08674000 T  0064:3
        FORGETSPACE(B);%                                                                     08676000 T  0065:2
        UNLOCKTOG(HOLDMASK);                                                                 08677000 T  0066:1
                                                                                                         08677000
END;%                                                                                        08678000 T  0069:3
                                                                                                         08626000
                                                                                                SIZE= 0072 WORDS
```

```
                    PROCEDURE TYPOP(KTR,PO); VALUE KTR,PO; REAL KTR,PO;                                    08679000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00308
PRT(612) = TYPOP
                    BEGIN REAL VASE,TUSTA,N,X,OPTER;                                                       08680000 T  0000:0

STACK(F+1) = VASE
STACK(F+2) = TUSTA
STACK(F+3) = N
STACK(F+4) = X
STACK(F+5) = OPTER
                         LABEL INCR;                                                                       08680500 T  0000:0
                    REAL SUBROUTINE SETT;                                                                  08681000 T  0000:0
                    BEGIN                                                                                  08681100 T  0001:0
                     STREAM(OPT:=[OPTION]:OPTER,N,NBS:=47-N,VASE);                                         08681200 T  0001:0
                         BEGIN                                                                             08681300 T  0003:2
                              DI:=DI+4;                                                                    08682000 T  0003:2
                              SI←OPTER;N(S1←S1+8);IF SC="←" THEN GO TO EXIT;%                              08683000 T  0003:3
                              8(IF SC<"0" THEN DS←CHR ELSE DS←1 LIT" ")};DS←2 LIT" ";%                     08684000 T  0005:3
                              SI:=OPT; SKIP NBS SB;                                                        08684500 T  0008:1
                              IF SB THEN TALLY:=1 ELSE                                                     08685000 T  0009:0
                              BEGIN DS:=3 LIT"NOT"; TALLY:=2; END;                                         08685500 T  0010:0
                                                                                                                       08685500
                              DS←5 LIT" SET←";%                                                            08686000 T  0011:0
                              DI:=VASE; SI:=LOC NBS; DS:=LIT" "; DS:=2 DEC; DS:=LIT" ";                    08686500 T  0012:0
                    EXIT:     OPT:=TALLY;                                                                  08687000 T  0013:3
                         END;                                                                              08688000 T  0014:0
                                                                                                                       08681300
                          SETT←P;                                                                          08689000 T  0014:1
                    END SETT;                                                                              08689100 T  0014:2
                                                                                                                       08681100
                                                                                                  %        08689110 C  0014:3
                                                                                                                       08681100
                         SLEEP([TOGLE],HOLDMASK);                                                          08689200 T  0014:3
                         LOCKTOG(HOLDMASK);                                                                08689300 T  0017:3
                                                                                                                       08689300
                         TUSTA:=M[(VASE:=KTR,[15:15]-1)-1];                                                08689900 T  0021:1
                         OPTER ← SPACE(OPTIONSZ)&OPTIONSZ[8:38:10];                                        08690000 T  0024:3
                         DISKWAIT(-OPTER,OPTIONSZ,MESSAGETABLE[0],[22:26]);                                08690020 T  0029:2
                         IF PO THEN                                                                        08690080 T  0032:2
                    BEGIN                                                                                  08690090 T  0032:3
                         STREAM(BUFF:=KTR, T:=0, OPTER, D:=[N]);                                           08690100 T  0033:1
                         BEGIN SI←BUFF;63(IF SC=" " THEN SI←SI+1 ELSE JUMP OUT TO L);L:                    08690110 T  0034:3
                         IF SC GEQ "0" THEN GO TO L4;                                                      08690120 T  0037:0
                         DI←LOC T;                                                                         08690130 T  0037:3
                         8(IF SC=" " THEN JUMP OUT TO L1 ELSE                                              08690140 T  0038:0
                           IF SC="←" THEN JUMP OUT TO L1 ELSE                                              08690150 T  0039:2
                           IF SC≥"0" THEN JUMP OUT TO L1 ELSE                                              08690160 T  0040:3
                            DS←1 CHR); L1:                                                                 08690170 T  0042:0
                         TALLY←0; BUFF←SI; SI←OPTER;                                                       08690180 T  0042:2
                         63(DI←LOC T;IF 8 SC≠DC THEN                                                       08690190 T  0043:1
                                   BEGIN IF SC="←" THEN                                                    08690200 T  0044:1
                                         BEGIN TALLY←48; JUMP OUT TO L3 END                                08690210 T  0044:3
                                                                                                                       08690210
                                         ELSE TALLY←TALLY+1                                                08690220 T  0045:2
                                   END ELSE JUMP OUT TO L2); TALLY←48;GO TO L3;L2:                          08690230 T  0045:3
                                                                                                                       08690200
                          IF SC="←" THEN BEGIN SI←BUFF;63(IF SC<"0" THEN SI←SI+1                           08690240 T  0047:2
                           ELSE JUMP OUT TO L4); L4: DI←LOC T; SI←SI+1;                                    08690250 T  0049:0
                            IF SC<"0" THEN BEGIN SI←SI-1; DS←1 OCT END ELSE                                08690260 T  0050:3
```

```
                                                                                08690260
                          BEGIN SI←SI-1; DS←2 OCT END;               08690270 T  0052:0
                                                                                08690270
              TALLY←47; T(TALLY←TALLY+63);                           08690280 T  0052:2
                          END;                                       08690290 T  0053:3
                                                                                08690240
           L3: T←TALLY; SI←LOC T; DI←D; DS← WDS;                     08690300 T  0053:3
           END;                                                      08690310 T  0054:3
                                                                                08690110
           IF N LSS OPTER.[8:10] THEN P(SETT,DEL);                   08690400 T  0055:0
           SPOUT(VASE INX TUSTA);                                    08690600 T  0058:1
        END ELSE                                                     08690800 T  0060:0
                                                                                08690090
        BEGIN                                                        08691000 T  0060:0
           STREAM(KTR:);                                             08691200 T  0060:2
              BEGIN SI:=KTR;                                         08691400 T  0061:2
                 IF SC="S" THEN TALLY:=1 ELSE                        08691600 T  0061:3
                 IF SC="R" THEN TALLY:=2 ELSE TALLY:=3;              08691800 T  0062:3
                 KTR:=TALLY;                                         08692000 T  0064:0
              END;                                                   08692200 T  0064:1
                                                                                08691400
           X:=P; N:=-1;                                              08692400 T  0064:2
INCR:      N:=N+1;                                                   08692600 T  0066:0
           IF ((KTR:=SETT) AND X) ≠ 0 THEN                           08692800 T  0067:1
           BEGIN SPOUT(VASE INX TUSTA);                              08693000 T  0069:2
              VASE:=SPACE(3);                                        08693200 T  0071:3
              GO TO INCR;                                            08693400 T  0074:0
           END;                                                      08693600 T  0074:2
                                                                                08693000
           IF KTR=0 THEN                                             08693800 T  0074:2
           IF X≠3 THEN                                               08694000 T  0075:1
           BEGIN STREAM(X:=X=1, VASE);                               08694200 T  0076:2
                 BEGIN DS:=12 LIT" ALL OTHERS ";                     08694400 T  0078:2
                    X(DS:=4 LIT"NOT ");                              08694600 T  0080:1
                    DS:=4 LIT"SET←";                                 08694800 T  0081:3
                 END;                                                08695000 T  0082:2
                                                                                08694400
              SPOUT(VASE INX TUSTA);                                 08695200 T  0082:3
           END ELSE FORGETSPACE(VASE)                                08695400 T  0084:2
                                                                                08694200
           ELSE GO TO INCR;                                          08695600 T  0085:1
        END;                                                         08695800 T  0085:3
                                                                                08691000
           FORGETSPACE(OPTER);%                                      08696000 T  0085:3
           UNLOCKTOG(HOLDMASK);                                      08696100 T  0086:2
                                                                                08696100
                 END;%                                               08697000 T  0090:0
                                                                                08680000
                                                                     SIZE= 0091 WORDS
```

```
                $ SET OMIT = NOT(DISKLOG)                                                    08697099 T  0000:0
               % THE FOLLOWING THREE DEFINES MUST EACH BE CHANGED IF THE                      08699000 T  0000:0
               % DISK ROW SIZE OF PBD AND PUD FILES IS TO BE CHANGED.                         08699050 T  0000:0
                 DEFINE PBDROWSZ   =                                                         08699100 T  0000:0
                                    300# %                                  %732-            08699150 P  0000:0
               %       PBDROWSZ IS THE DISK ROW SIZE, IN SEGMENTS, OF PBD AND               08699200 T  0000:0
               %       PUD FILES. PBDROWSZ MUST BE A MULTIPLE OF THREE.                     08699250 T  0000:0
                      ,PBDRECS    =                                                         08699300 T  0000:0
                                    100# %                                  %732-            08699350 P  0000:0
               %       PBDRECS=PBDROWSZ/3 ; NO. OF LOGICAL RECORDS PER ROW.                 08699400 T  0000:0
                      ,PBDTOTRECS =                                                         08699450 T  0000:0
                                    2000# %                                 %732-            08699500 P  0000:0
               ;%      PBDTOTRECS=PBDRECS*20 ; NO. OF TOTAL RECORDS PER BACK-UP FILE.       08699550 T  0000:0
                PROCEDURE PBIO(ALPHA,POINTER); VALUE ALPHA; REAL ALPHA,POINTER;     %P       08700000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00312
               %                                                                            08700900 T  0000:0
               %   THIS PROCEDURE HANDLES IO FOR THE CREATION OF BACK-UP FILES. FOR         08700910 T  0000:0
               %   DISK, IT OBTAINS NEW ROWS AND NEW FILES AS NECESSARY. IF IT RUNS         08700920 T  0000:0
               %   OUT OF FILES, HEADER[5].[4:1] IS SET AND THE JOB TERMINATED, LEAVING     08700930 T  0000:0
               %   ONE BLOCK FOR THE LABEL AND DS MESSAGE.                                  08700940 T  0000:0
               %                                                                            08700950 T  0000:0
               % ALPHA IS ADDRESS OF TOP I/O DESCRIPTOR, <0 MEANS READ              %P       08701000 T  0000:0
               % POINTER IS FIB[14]                                                 %P       08702000 T  0000:0
                 BEGIN NAME HEADER;                                                %P       08703000 T  0000:0
STACK(F+1) = HEADER
                 REAL T=-2,IOD,H,S;                                                         08704000 T  0000:0
STACK(F-2) = T
STACK(F+2) = IOD
STACK(F+3) = H
STACK(F+4) = S
                INTEGER I=IOD;                                                              08704100 T  0000:0
STACK(F+2) = I
                LABEL OK;                                                                   08704500 T  0000:0
                     POINTER.[FF]←POINTER INX  72;                                  %P      08705000 T  0000:0
                     IF (HEADER←POINTER.[3:15])≠0 THEN    %%%%PB ON DISK  %%%%%  %P      08706000 T  0003:1
                     BEGIN                                                                  08707000 T  0005:0
                          HEADER := [M[(*HEADER)]];                                         08707500 T  0005:2
                          IF HEADER[7] GEQ PBDTOTRECS-2 THEN % CHECK FOR NEW FILE           08708000 T  0007:0
                          BEGIN                                                             08708200 T  0009:0
               $ SET OMIT = PACKETS                                                         08708400 T  0009:2
                            IF HEADER[6].[42:6]="9" THEN                                    08709000 T  0009:2
               $ POP OMIT OMIT                                                              08709200 T  0011:2
                               IF HEADER[7] GEQ PBDTOTRECS THEN P(XIT) ELSE                 08709400 T  0011:2
                               IF HEADER[5].[4:1] THEN GO TO OK ELSE                        08709500 T  0014:1
                               BEGIN STREAM(F:=PRT[P1MIX,3] INX M[M[ALPHA-3] INX 4],        08709600 T  0017:2
                                        [13:11], H:=H:=NABS(SPACE(12)));                    08709800 T  0021:2
                                    BEGIN S]:=F; S]:=S]+1;                                  08710000 T  0025:3
                                          DS:=24 LIT"TOO MANY BACKUP RECS ON ";             08710200 T  0026:1
                                          DS:=7 CHR; DS:=LIT"/"; S]:=S]+1; DS:=7 CHR;       08710400 T  0029:2
                                          DS:=2 LIT"*.";                                    08710600 T  0030:3
                                    END;                                                    08710800 T  0031:1
                                                                                                        08710000
                                    HEADER[5].[4:1]:=1;                                     08711000 T  0031:2
                                    GO TO OK;                                               08711200 T  0034:1
                               END;                                                         08711400 T  0034:3
                                                                                                        08709600
                          IF HEADER[7] GEQ PBDTOTRECS THEN   % GET A NEW FILE           08711600 T  0034:3
```

```
                    BEGIN                                                                    08711800 T  0036:1
                       IF I:=HEADER[5].[3:1] THEN HEADER[5].[3:1]:=0;                        08712000 T  0036:3
                       H←SPACE(30); S←M[HEADER INX NOT 0];                                   08712100 T  0042:0
                       DISKWAIT(-H,30,S);                                                    08712110 T  0046:2
                       M[H+7]←HEADER[7];                                                     08712120 T  0048:0
                       M[H+5].[2:1]←0;                                                       08712130 T  0050:3
                       DISKWAIT(H,30,S);                                                     08712140 T  0054:0
                       M[H+7]←M[H+9]←0;                                                      08712150 T  0055:1
                       MOVE(20,H+9,H+10);                                                    08712160 T  0059:0
                       M[H+5]←(*P(DUP)) OR M;                                                08712170 T  0061:2
                       HEADER[5].[3:1]:=I; %SET CP BK UP TOG                                 08712200 T  0064:1
                       HEADER[7] := 0;                                                       08712500 T  0067:0
                       HEADER[3] := XCLOCK + P(RTR);                                         08713000 T  0068:2
                       STREAM(ONE:=1, H:=[HEADER[6]]);                                       08713250 T  0070:2
                       BEGIN SI:=LOC ONE; DS:=8 ADD;                                         08713500 T  0072:0
                            DI:=DI+24; 20(DS:=8 LIT"0");                                     08713750 T  0072:2
                       END;                                                                  08714000 T  0074:2
                                                                                                        08713500
                       M[H+7]←PBDROWSZ DIV 3;                                                08714110 T  0074:3
                       HEADER[9]←M[H+9]←1;                                                   08714120 T  0077:1
                       HEADER[10]←M[H+10]←GETUSERDISK(-(PBDROWSZ+1));                        08714130 T  0080:2
                       M[HEADER INX NOT 0] := EUF(-(IF I THEN "PUD    "                     08714140 T  0085:1
                         ELSE "PBD    "),HEADER[6],H-1);                                    08714150 T  0088:0
                       FORGETSPACE(H);                                                       08714170 T  0091:2
$ SET OMIT = PACKETS                                                                         08714199 T  0092:1
                       FILEMESSAGE((IF I THEN "PUD    " ELSE                                08714300 T  0092:1
                                   "PBD    ")&HEADER[6][24:6:24],                            08714310 T  0094:0
                                   "OUT    " &HEADER[6][30:30:18],                           08714320 T  0096:0
                                   0,"       ",0,0,0,                                        08714330 T  0098:0
                                   (PBDREL OR OPNMESS));                                     08714340 T  0099:1
                    END;                                                                     08714400 T  0101:1
                                                                                                        08711800
                    END ELSE                                                                 08714500 T  0101:1
                                                                                                        08708200
                         IF HEADER[7] MOD PBDRECS=0 THEN %GET NEW ROW                        08715000 T  0101:1
                         BEGIN H:=SPACE(30); S:=M[HEADER INX NOT 0];                         08715100 T  0109:0
                         DISKWAIT(-H,30,S);                                                  08715200 T  0114:0
                         HEADER[9+HEADER[9]←*P(DUP)+1]←                                      08716000 T  0115:2
                                                  GETUSERDISK(-(PBDROWSZ+1));                08716010 T  0118:3
                         M[H+9+HEADER[9]]←HEADER[9+HEADER[9]];                               08716100 T  0121:0
                         M[H+9]←HEADER[9];                                                   08716110 T  0126:1
                         M[H+7]←HEADER[7] + PBDROWSZ DIV 3;                                  08716200 T  0129:0
                         DISKWAIT(H,30,S);                                                   08716300 T  0132:3
                         FORGETSPACE(H);                                                     08716500 T  0134:0
                         END;                                                                08716600 T  0134:3
                                                                                                        08715100
OK:                                                                                          08716800 T  0134:3
                         STREAM(A←I←HEADER[HEADER[9]+9]←(HEADER[7] MOD                       08717000 T  0134:3
                              PBDRECS)×3,D←POINTER.[CF]-1);                                  08718000 T  0138:1
                              BEGIN SI←LOC A; DS←8 DEC END;                        %P        08720000 T  0141:2
                                                                                                        08720000
                              HEADER[7]←(*P(DUP))+1;                               %P        08721000 T  0142:1
                    IOD←@1413301004777777;                                                   08722000 T  0144:2
                         END ELSE  %% ON TAPE %%                                 %P        08723000 T  0145:1
                                                                                                        08707000
                    IOD←@2132050000000&M[POINTER INX NOT 1][3:14:4];             %P        08724000 T  0145:1
                    IOREQUEST(M[ALPHA],POINTER INX IOD&ALPHA[24:1:1],            %P        08726000 T  0150:1
```

```
                              M[POINTER INX NOT 1]);                    %P      08727000 T  0153:1
      M[T]←IOD INX M[T]&O[26:26:7]&O[19:19:1] AND NOT M;                %P      08728000 T  0155:1
      IF H LSS 0 THEN                                                           08728500 T  0160:3
      BEGIN TERMINATE(P1MIX);                                                   08728600 T  0161:2
            TERMINALMESSAGE(H);                                                 08728700 T  0162:3
      END;                                                                      08728800 T  0163:2
                                                                                          08728600
FND PR1O;                                                               %P      08729000 T  0163:2
                                                                                          08703000
                                                                                SIZE= 0165 WORDS
```

```
                PROCEDURE TIMERELAXER(KTR,TYPE,MIX);%                                                    08730000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00318
PRT(613) = TIMERELAXER
                VALUE                   KTR,TYPE,MIX;%                                                   08731000 T  0000:0
                REAL                    KTR,TYPE,MIX;%                                                   08732000 T  0000:0
                   BEGIN INTEGER BUFF,PRT,IOT,T,P1,I1;%                                                  08733000 T  0000:0
STACK(F+1) = BUFF
STACK(F+2) = PRT
STACK(F+3) = IOT
STACK(F+4) = T
STACK(F+5) = P1
STACK(F+6) = I1
                      LABEL SPIT;%                                                                       08734000 T  0000:0
                  DEFINE VCT = 29#, % CHANGE TIME LIMITS                                                 08734010 T  0000:0
                         VXT = 30#, % EXTEND TIME LIMITS                                                 08734020 T  0000:0
                         VTL = 31#; % PRINT TIME LIMITS                                                  08734030 T  0000:0
                      COMMENT:  THIS ROUTINE SHOULD BE BLAMED ON WWF4;%                                  08734100 T  0000:0
                $ SET OMIT = NOT(PACKETS)                                                                08734499 T  0000:0
                      DEFINE UNITNO = PSEUDOMIX[MIX]#;                                                   08734500 T  0000:0
                $ POP OMIT                                                                               08734501 T  0000:0
                      BUFF ← KTR.[15:15]-1;%                                                             08735000 T  0000:0
                      IF TYPE NEQ VTL THEN BEGIN;                                                        08736000 T  0003:1
                           STREAM(IOT←0,PRT←0,CODE←0; KTR);%                                             08737000 T  0004:2
                           BEGIN SI←KTR;  IF SC=" " THEN BEGIN L1;  SI←SI+1;%                            08738000 T  0006:1
                                IF SC=" " THEN GO L1; END;                          %534-                08739000 P  0007:1
                                                                                                                     08738000
                                IF SC="*" THEN BEGIN SI←SI+1; GO L5; END;           %534-                08739500 C  0008:0
                                                                                                                     08739500
                                IF SC="," THEN GO L2;  IF SC<"0" THEN GO EXIT;%                          08740000 T  0009:0
                                KTR←SI;  L3:  TALLY←TALLY+1;  SI←SI+1;                                   08741000 T  0010:2
                                IF SC≥"0" THEN GO L3;  SI←KTR;  CODE←TALLY;                              08742000 T  0011:1
                                DI←LOC PRT;  DS←CODE OCT;  TALLY←0;%                                     08743000 T  0012:2
                           L5:  IF SC=" " THEN BEGIN L4:  SI←SI+1;%                                      08744000 T  0013:2
                                IF SC=" " THEN GO L4 END;  IF SC="," THEN GO L2;%                        08745000 T  0014:1
                                                                                                                     08744000
                                IF SC="." THEN TALLY←1;  GO EXIT;%                                       08746000 T  0015:3
                           L2:  SI←SI+1;  IF SC=" " THEN BEGIN L6:  SI←SI+1;%                            08747000 T  0016:3
                                IF SC=" " THEN GO L6 END ; KTR←SI;%                                      08748000 T  0017:3
                                                                                                                     08747000
                                IF SC="*" THEN BEGIN TALLY←1;  GO EXIT END;%                             08749000 T  0018:3
                                                                                                                     08749000
                                IF SC="." THEN BEGIN TALLY←1; GO EXIT; END;         %534-                08749500 C  0019:3
                                                                                                                     08749500
                                IF SC<"0" THEN GO EXIT;  L7:  TALLY←TALLY+1;%                            08750000 T  0020:3
                                SI←SI+1;  IF SC≥"0" THEN GO L7;  DI← LOC IOT;%                           08751000 T  0021:3
                                SI←KTR;  CODE←TALLY;  DS←CODE OCT;  TALLY←1;%                            08752000 T  0023:0
                           EXIT:  CODE←TALLY;%                                                           08753000 T  0024:1
                           END STREAM;%                                                                  08754000 T  0024:2
                                                                                                                     08738000
                      IF NOT P THEN GO SPIT;%                                                            08755000 T  0024:3
                      PRT ← P×3600;  IOT ← P×3600;%                                                      08756000 T  0025:1
                      IF TYPE=VXT THEN BEGIN                                                             08757000 T  0027:1
                           IF PRT≠0 THEN BEGIN%                                                          08758000 T  0028:2
                                PROCTIME[MIX] ← *P(DUP)-PRT;%                                            08759000 T  0029:3
                                JAR[M,X,3] ← *P(DUP)+PRT;%                                               08760000 T  0031:3
                           END;%                                                                         08761000 T  0034:1
                                                                                                                     08758000
```

```
      IF IOT≠0 THEN BEGIN%                                                    08762000 T  0034:1
           IOTIME[MIX] ← *P(DUP)-IOT;%                                        08763000 T  0035:2
           JAR[MIX,4] ← *P(DUP)+IOT;%                                         08764000 T  0037:2
END END ELSE BEGIN%                                                           08765000 T  0040:0
                                                                                          08762000
                                                                                          08757000
      IF PRT≠0 THEN BEGIN%                                                    08766000 T  0042:0
           PROCTIME[MIX] ← *P(DUP)+JAR[MIX,3]-PRT;%                           08767000 T  0043:1
           JAR[MIX,3] ← PRT;%                                                 08768000 T  0046:2
      END;%                                                                   08769000 T  0048:1
                                                                                          08766000
      IF IOT≠0 THEN BEGIN%                                                    08770000 T  0048:1
           IOTIME[MIX] ← *P(DUP)+JAR[MIX,4]-IOT;                              08771000 T  0049:2
           JAR[MIX,4] ← IOT;%                                                 08772000 T  0052:3
END END;                                                                      08773000 T  0054:2
                                                                                          08770000
                                                                                          08765000
STREAM(TEST←0; X←JARROW[MIX],MIX,Z←PRT≠0,I←IOT≠0,%                            08774000 T  0054:2
           K:=TYPE=VXT,T:=T:=SPACE(10));                                      08775000 T  0057:2
BEGIN DS←LIT " "; Z(DS←4 LIT "PRT "; TALLY←1;%                                08776000 T  0060:3
      I(DS←4 LIT"AND "));  I(DS←4 LIT "IOT "; TALLY←1);%                      08777000 T  0062:3
      DS←8 LIT "ESTIMATE"; Z(I(DS←LIT "S"));%                                 08778000 T  0066:1
      DS←8LIT" CHANGED"; K(DI←DI-7; DS←8LIT"EXTENDED");%                      08779000 T  0069:2
      DS←5LIT" FOR"; SI←X; SI←SI+1; DS←7CHR; SI←SI+1;%                        08780000 T  0073:0
      DS←LIT"/"; DS←7CHR; DS←LIT"="; SI←LOC Z;%                               08781000 T  0075:0
      SI←SI-8; DS←2DEC; DS←LIT"←"; TEST←TALLY;                                08782000 T  0076:2
      DI←DI-3; DS←FILL;                                                       08782500 T  0077:3
END STREAM;%                                                                  08783000 T  0078:1
                                                                                          08776000
IF P THEN SPOUTER(T INX M[BUFF-1],UNITNO,1) ELSE                              08784000 T  0078:2
      FORGETSPACE(T);                                                         08784100 T  0082:1
END;                                                                          08785000 T  0083:2
                                                                                          08736000
      IOT ← PRT ← -0;%                                                        08786000 T  0083:2
      IF P(JAR[MIX,3],DUP)=@377777777777 THEN P(DEL)ELSE%                     08787000 T  0085:0
      P1 ← (PRT ← P DIV 3600)-60×(PRT ← PRT DIV 60);%                         08788000 T  0087:2
      IF P(JAR[MIX,4],DUP)=@377777777777 THEN P(DEL) ELSE%                    08789000 T  0092:2
      I1 ← (IOT ← P DIV 3600)-60×(IOT ← IOT DIV 60);%                         08790000 T  0095:0
      STREAM(X←JARROW[MIX], MIX,PRT,P1,IOT,I1,BUFF);                          08791000 T  0101:2
      BEGIN DS←17LIT" TIME LIMITS FOR"; SI←X; SI←SI+1; DS←7CHR;%               08792000 T  0104:0
           DS←LIT"/"; SI←SI+1; DS←7CHR; DS←LIT"="; SI←LOC MIX;                08793000 T  0107:1
           DS←2DEC; MIX←DI; DI←DI-2; DS←FILL; DI←MIX;                         08793500 T  0109:0
           DS←10LIT" ARE: PRT="; IF SC="+" THEN                               08794000 T  0110:1
           BEGIN  SI←SI+16;  DS←8LIT"NO LIMIT" END ELSE BEGIN%                08795000 T  0112:1
                                                                                          08795000
           DS←8DEC;  DS←LIT":";  DS←2DEC;  BUFF←DI;  DI←DI-11;%               08795500 T  0114:0
           DS←7FILL;  DI←BUFF END;  DS←6LIT"; IOT=";  IF SC="+" THEN          08796000 T  0115:2
                                                                                          08795000
           DS←10LIT"NO LIMIT,←" ELSE BEGIN DS←8DEC;  DS←LIT":";%              08796500 T  0117:2
           DS←2DEC;  DS←2LIT",←";  DI←DI-13;  DS←7FILL END;                   08797000 T  0120:0
                                                                                          08796500
      END STREAM;%                                                            08797500 T  0121:1
                                                                                          08792000
SPIT:%                                                                        08798000 T  0121:2
      SPOUTER(BUFF INX M[BUFF-1],UNITNO,1);                                   08798500 T  0121:2
END TIMERELAXER;                                                              08799000 T  0124:3
                                                                                          08733000
```

SIZE= 0126 WORDS

```
                PROCEDURE CHANGEFACTOR(BUFF,TF); VALUE BUFF,TF; REAL BUFF; BOOLEAN TF;          08800000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00323
PRT(614) = CHANGEFACTOR
           BEGIN REAL FACTOR,B,T; INTEGER TEMP=T;                                             08801000 T  0000:0
STACK(F+1) = FACTOR
STACK(F+2) = B
STACK(F+3) = T
STACK(F+3) = TEMP
                LABEL TYPEOUT,EXIT;                                                           08802000 T  0000:0
                BUFF ← ((B←BUFF).[15:15]=1)&MYP(DUP)=1][9:9:9];                               08802500 T  0000:0
                IF TF THEN GO TYPEOUT;                                                        08803000 T  0005:1
                STREAM(ANS←0:B);                                                              08804000 T  0006:1
                  BEGIN SI←B; DI←LOC B; DS←8LIT"00000000"; DI←DI-2;                           08805000 T  0007:2
                  L:    IF SC = " " THEN BEGIN SI←SI+1; GO TO L END;                          08806000 T  0009:2
                                                                                                        08806000
                        IF SC < "0" THEN GO TO L1;                                            08807000 T  0010:2
                        IF SC > "9" THEN GO TO L1;                                            08808000 T  0011:1
                        SI←SI+1;                                                              08809000 T  0012:0
                        IF SC < "0" THEN GO TO ONECHR;                                        08810000 T  0012:1
                        IF SC ≤ "9"                                                           08810500 T  0013:0
                          THEN          BEGIN SI←SI-1; DI←DI-2; DS←2 CHR; END                 08811000 T  0013:1
                                                                                                        08811000
                          ELSE ONECHR: BEGIN SI←SI-1; DI←DI-1; DS←1 CHR; END;                 08812000 T  0014:1
                                                                                                        08812000
                        IF SC = "." THEN GO TO L2 ELSE GO TO L3;                              08813000 T  0015:1
                  L1:   IF SC ≠ "." THEN GO TO ERROR;                                         08814000 T  0016:2
                  L2:   SI←SI+1;                                                              08815000 T  0017:1
                        IF SC < "0" THEN GO TO ERROR;                                         08816000 T  0017:2
                        IF SC > "9" THEN GO TO ERROR;                                         08817000 T  0018:1
                        DS←CHR;                                                               08818000 T  0019:0
                        IF SC ≥ "0" THEN IF SC ≤ "9" THEN DS←CHR;                             08819000 T  0019:1
                  L3:   IF SC = " " THEN GO CONVERT;                                          08820000 T  0020:2
                        IF SC = "←" THEN GO CONVERT;                                          08821000 T  0021:1
                  ERROR:DI←LOC ANS; SKIP 1 DB; DS← 10 SET; GO TO EXITS;                       08822000 T  0022:0
                  CONVERT: SI←LOC B; SI←SI+4; DI←LOC ANS; DS←4 OCT;                           08823000 T  0023:0
                  EXITS:                                                                      08824000 T  0024:0
                  END STREAM;                                                                 08825000 T  0024:0
                                                                                                        08805000
                P(.FACTOR,←);                                                                 08826000 T  0024:1
                IF FACTOR < 0 THEN GO TO EXIT;                                                08828000 T  0024:3
                CORE.[4:14] ← FACTOR;                                                         08829000 T  0026:0
                SLEEP([TOGLE],HOLDMASK); LOCKTOG(HOLDMASK);                                   08830000 T  0027:3
                                                                                                        08830000
                B ← SPACE(30);                                                                08831000 T  0032:3
                DISKWAIT(-B,-30,DIRECTORYTOP-SYSNO);                                          08832000 T  0035:0
                MYB+9] ← CORE;                                  % CHANGE FACTOR              08833000 T  0037:1
                DISKWAIT(B,-30,DIRECTORYTOP-SYSNO);                                           08834000 T  0039:1
                FORGETSPACE(B);                                                               08835000 T  0041:1
                UNLOCKTOG(HOLDMASK);                                                          08836000 T  0042:0
                                                                                                        08836000
                SELECTION;                                                                    08836500 T  0045:2
TYPEOUT:                                                                                      08837000 T  0046:3
                STREAM(I←(FACTOR←CORE.[4:14]) DIV 100, FR←(TEMP←FACTOR MOD 100),              08838000 T  0046:3
                       MX←(TEMP←CORE.[CF]×64×FACTOR/100),US←CORE.[FF]×64,     %749-          08839000 P  0050:0
 $ SET OMIT = NOT WORKSET                                                     %749-          08839499 C  0054:0
                       NOSELECT←WKSETNOSELECT,                                %749-          08839500 C  0054:0
 $ POP OMIT                                                                   %749-          08839501 C  0055:0
```

```
            BUFF);                                                                  %749-
        BEGIN DS←9 LIT"FACTOR = ";
              SI←LOC I; DS←2 DEC; I←DI; DI←DI-2; DS←FILL; DI←I;
                    DS←LIT"."; DS←2 DEC;
              DS←13 LIT", MAX CORE = "; DS←7 DEC;
                    I←DI; DI←DI-7; DS←6 FILL; DI←I;
              DS←7LIT",USING "; DS←7 DEC; I←DI; DI←DI-7; DS←6 FILL;                 %749-
              DI:=I;                                                                %749-
 $ SET OMIT = NOT WORKSET                                                           %749-
              NOSELECT(DS:=14 LIT ",WKSETNOSELECT");                                %749-
 $ POP OMIT                                                                         %749-
              DS:=LIT"←";                                                           %749-
        END STREAM;

EXIT: SPOUT(BUFF);
END CHANGEFACTOR;
```

```
08839600 C  0055:0
08840000 T  0055:2
08841000 T  0057:0
08842000 T  0058:2
08843000 T  0059:1
08844000 T  0061:2
08845000 P  0062:2
08845500 C  0064:3
08845999 C  0065:0
08846000 P  0065:0
08846001 C  0067:3
08846010 C  0067:3
08847000 T  0068:1
                    08840000
08848000 T  0068:2
08849000 T  0069:3
                    08801000
          SIZE= 0070 WORDS
```

```
                PROCEDURE SHEETDIDDLER(BUFF,TYPE,SID); VALUE BUFF,TYPE,SID;                    08850000 T  000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00326
PRT(6,5) = SHEETDIDDLER
                                                  REAL  BUFF,TYPE,SID;                         08850100 T  000:0
                COMMENT TYPE = 6: PS -- CHANGE PRIORITY OF JOB IN SCHEDULE                     08850200 T  000:0
                        = 8: XS -- EXECUTE JOB IN SCHEDULE (FORCE SELECTION)                   08850300 T  000:0
                        = 7: ES -- ELIMINATE JOB FROM SCHEDULE (FORCE SELECTION,               08850400 T  000:0
                                                                THEN "DS")                     08850500 T  000:0
                        = 5: TS -- TYPE OUT SCHEDULE;                                          08850600 T  000:0
                BEGIN REAL IOD,T,PRIORITY;                                                     08851000 T  000:0
STACK(F+1) = IOD
STACK(F+2) = T
STACK(F+3) = PRIORITY
                        INTEGER LEVEL,NEXTLINK,THISLINK,LASTLINK;                              08852000 T  000:0
STACK(F+4) = LEVEL
STACK(F+5) = NEXTLINK
STACK(F+6) = THISLINK
STACK(F+7) = LASTLINK
                        INTEGER ES,EM,EH; DEFINE ET = EH#;                                     08852500 T  000:0
STACK(F+10) = ES
STACK(F+11) = EM
STACK(F+12) = EH
                    $ SET OMIT = NOT(DATACOM )                                                 08852599 T  000:0
                        BOOLEAN LASTPASSED,ATLEASTONE;                                         08853000 T  000:0
STACK(F+13) = LASTPASSED
STACK(F+14) = ATLEASTONE
                        ARRAY S[*],DLNK[*];                                                    08854000 T  000:0
STACK(F+15) = S
STACK(F+16) = DLNK
                    $ SET OMIT = NOT(PACKETS)                                                  08854499 T  000:0
                        DEFINE UNITNO = S[23],[2:6]#;  % ORIGINATING UNIT                      08854500 T  000:0
                    $ POP OMIT                                                                 08854501 T  000:0
                        LABEL CONTINUE,C1,READIN,GNX,TS,TS1,TS2,                               08855000 T  000:0
                              XSFS,ESLL,PS,PS1,PS2,SPIT,EXIT;                                  08856000 T  000:0
                        SUBROUTINE GETNEXT; % READS IN NEXT JOB SHEET ENTRY                    08858000 T  000:0
                        BEGIN                                                                  08859000 T  001:0
                        CONTINUE: LASTLINK ← THISLINK;                                         08860000 T  001:0
                                  IF (THISLINK←NEXTLINK) ≠ 0 THEN GO TO READIN;                08860500 T  001:3
                        C1:       IF (LEVEL←LEVEL+1) > MIXMAX THEN                             08861000 T  003:2
                                    BEGIN LASTPASSED ← TRUE; GO TO GNX END;                    08862000 T  005:1
                                                                                                           08862000
                                  LASTLINK ← NEXTLINK ← 0;                                     08863000 T  007:0
                                  IF (THISLINK←SHEET[LEVEL],[CF]) = 0 THEN GO TO C1;           08864000 T  008:1
                        READIN:   DISKIO(IOD,-(S.INX 0-1),30,THISLINK);                        08865000 T  010:3
                                  SLEEP([IOD],IOMASK);                                         08866000 T  013:3
                                  NEXTLINK ← S[29];                                            08867000 T  015:1
                                  IF S[0],[36:6]=@14 THEN GO CONTINUE;%PASS LM ENTRY           08868000 T  016:1
                        GNX:                                                                   08869000 T  018:1
                        END GETNEXT;                                                           08870000 T  018:1
                                                                                                           08859000
                        SLEEP([TOGLE],SHEETMASK); LOCKTOG(SHEETMASK);                          08880000 T  018:2
                                                                                                           08880000
                        S := [M[TYPEDSPACE(31,SHEETAREAV)]] & 30[SIZE];%          %167=       08881000 P  027:2
                        LEVEL ← -1; LASTPASSED ← FALSE;                                        08882000 T  031:1
                           IF BUFF≠0 THEN                                                      08882050 T  033:0
                        BUFF ← ((T←BUFF),[15:15]-1)&M[P(DUP)-1][9:9:9];                        08882500 T  033:3
                    $ SET OMIT = NOT(DATACOM )                                                 08882599 T  038:3
```

```
      IF TYPE=5 THEN GO TS; IF TYPE GTR 6 THEN GO XSES; GO PS;                    08883000 T  0038:3
TS:   ATLEASTONE ← FALSE;                                                         08884000 T  0041:3
TS1:  GETNEXT; IF LASTPASSED THEN GO TO TS2;                                      08885000 T  0042:2
    IF SID NEQ 63 THEN BEGIN IF S[3].[8:10] NEQ SID THEN GO TS1 END ELSE          08885500 T  0045:0
                                                                                                08885500
    IF ATLEASTONE THEN BUFF.[CF]←SPACE(12);                                       08886000 T  0048:1
      ET←((CLOCK+P(RTR))/60)-S[23].[24:24];                                       08886300 T  0052:1
      ES ← ET MOD 60; ET ← ET DIV 60; EM ← ET MOD 60; EH ← ET DIV 60;             08886600 T  0055:1
    STREAM(TU←S[23].[9:4],BUF←S[23].[14:4],                                       08887000 T  0060:1
    RT:=S[23].[9:4] NEQ 0,C:=LEVEL,J1:=(S[0] LSS 0) OR                            08887001 T  0062:2
    (S[2].SSYSJOBF = LIBMAINCODE),J2:=S[27],                                      08887010 T  0065:1
    J←S[*],ID←S[3].[8:10],EH,EM,ES,A←S[20]x64,BUFF); %                            08887100 T  0067:2
        BEGIN SI←LOC C; DS←6 DEC; DI←DI-6; DS←5 FILL; DI←BUFF; DI←DI+6;            08888000 T  0071:1
              DS←LIT":"; SI←J; SI←SI+1; DS←7 CHR; DS←LIT"/"; SI←SI+1;             08889000 T  0072:3
              DS:=7CHR;J1(DS:=LIT" ";SI:=LOC J2;SI:=SI+1;DS:=7CHR);               08890000 T  0074:3
              DS:=LIT"=";SI:=LOC ID;DS:=2 DEC;                                    08890010 T  0077:0
    RT(DS←6 LIT " FROM "; SI←LOC TU; DS←2 DEC; %                                  08890100 T  0078:0
    DS←1 LIT "/"; SI←LOC BUF; DS←2 DEC;); %                                       08890200 T  0080:0
              DS←7 LIT" IN FOR"; SI←LOC EH;                                       08891000 T  0081:1
              3(DS ← LIT":"; DS←2 DEC); ES←DI; DI←DI-9; DS←8 FILL;                08892000 T  0082:3
              DI←ES; DS←8 LIT", NEEDS ";                                          08893000 T  0084:3
              SI←LOC A; DS←5 DEC; DS←LIT"←"; DI←DI-6; DS←4 FILL;                  08899000 T  0086:1
        END STREAM;                                                               08900000 T  0087:3
                                                                                                08888000
      SPOUTER(BUFF,IF SID≠63 THEN UNITNO ELSE 0,1);                               08901000 T  0088:0
      IF SID NEQ 63 THEN BEGIN TYPE:=5;GO EXIT END;                               08901500 T  0092:0
                                                                                                08901500
      ATLEASTONE←TRUE;                                                            08902000 T  0094:2
      GO TO TS1;                                                                  08903000 T  0095:1
TS2:  IF ATLEASTONE THEN GO TO EXIT;                                              08904000 T  0095:3
      IF SID NEQ 63 THEN TYPE:=5 ELSE%                                            08904050 T  0096:3
      STREAM(BUFF);  DS ← 15 LIT " NULL SCHEDULE←";%                      %WF     08905000 T  0098:3
      SPOUT(BUFF); GO TO EXIT;                                                    08906000 T  0102:2
XSES: GETNEXT;                                                                    08910000 T  0104:1
        IF LASTPASSED THEN BEGIN IF BUFF≠0 THEN SPOUT(BUFF);                      08911000 T  0105:0
                                 GO TO EXIT; END;                                 08911050 T  0108:1
                                                                                                08911000
      IF S[3].[8:10]≠SID THEN GO TO XSES;                                         08912000 T  0108:3
 $ SET OMIT = NOT(DATACOM )                                                       08912099 T  0110:3
      S[2].[1:2]:=(IF TYPE=8 THEN 2 ELSE 3); % 7=ES,8=XS                          08913000 T  0110:3
      DISKIO(IOD,S INX 0-1,30,THISLINK); SLEEP([IOD],IOMASK);                     08915000 T  0115:1
      GO TO SPIT;                                                                 08915100 T  0119:2
PS:   STREAM(PRIORITY:T);                                                         08916000 T  0120:0
      BEGIN SI←T;                                                                 08917000 T  0121:1
      N:    IF SC="←" THEN GO TO X;                                               08918000 T  0121:2
            IF SC<"0" THEN BEGIN SI←SI+1; GO TO N; END; T←SI;                     08919000 T  0122:1
                                                                                                08919000
      K:    IF SC≥"0" THEN IF SC≤"9" THEN                                         08920000 T  0123:2
                  BEGIN TALLY←TALLY+1; SI←SI+1; GO TO K END;                      08921000 T  0124:2
                                                                                                08921000
            SI←T; DI←LOC PRIORITY; T←TALLY; DS←T OCT; GO TO Z;                    08922000 T  0125:1
      X:    DI←LOC PRIORITY; SKIP DB; DS←11 SET;                                  08923000 T  0126:3
      Z:                                                                          08924000 T  0127:2
      END STREAM;                                                                 08925000 T  0127:2
                                                                                                08917000
      IF (PRIORITY←P)<0 THEN BEGIN SPOUT(BUFF); GO TO EXIT END;                   08926000 T  0127:3
                                                                                                08926000
```

```
PS1:  GETNEXT; IF LASTPASSED THEN BEGIN SPOUT(BUFF); GO TO EXIT END;                08927000 T  0131:0
                                                                                                  08927000
      IF S[3].[8:10]≠SID THEN GO TO PS1;                                            08928000 T  0134:2
% DELINK AND RELINK THIS SHEET ENTRY                                               08929000 T  0136:2
      DLNK := [M[TYPEDSPACE(31,SHEETAREAV)]] & 30[SIZE];%          %167-           08930000 P  0136:2
      IF NEXTLINK = 0 THEN SHEET[LEVEL].[FF] ← LASTLINK;                            08931000 T  0140:1
      IF LASTLINK = 0 THEN BEGIN SHEET[LEVEL].[CF]← NEXTLINK;GO PS2 END;            08932000 T  0143:2
                                                                                                  08932000
      DISKIO(IOD,-(DLNK INX 0-1),30,LASTLINK); SLEEP([IOD],IOMASK);                 08933000 T  0147:1
      DLNK[29] ← NEXTLINK;                                                          08934000 T  0151:3
      DISKIO(IOD,+(DLNK INX 0-1),30,LASTLINK); SLEEP([IOD],IOMASK);                 08935000 T  0153:0
PS2:  S[2].[CF] ← IF (S[18]←PRIORITY) > 32767 THEN 32767 ELSE PRIORITY;             08936000 T  0157:1
      LEVEL ← IF PRIORITY > MIXMAX THEN MIXMAX ELSE PRIORITY;                       08937000 T  0162:1
      IF SHEET[LEVEL].[CF] ≠ 0 THEN                                                 08938000 T  0165:0
      BEGIN DISKIO(IOD,-(DLNK INX 0-1),30,SHEET[LEVEL].[FF]);                       08939000 T  0166:2
            SLEEP([IOD],IOMASK);                                                    08940000 T  0170:3
            DLNK[29] ← THISLINK;                                                    08941000 T  0172:1
            DISKIO(IOD,+(DLNK INX 0-1),30,SHEET[LEVEL].[FF]);                       08942000 T  0173:2
            SLEEP([IOD],IOMASK);                                                    08943000 T  0177:0
      END ELSE SHEET[LEVEL] ← THISLINK;                                             08944000 T  0178:2
                                                                                                  08939000
      SHEET[LEVEL].[FF] ← THISLINK;                                                 08944500 T  0181:1
      S[29] ← 0; S[3] ← ABS(S[3]); % TO GET SELECTION TO PRINT MESSAGE;             08945000 T  0183:1
      DISKIO(IOD,+(S INX 0-1),30,THISLINK); SLEEP([IOD],IOMASK);                    08946000 T  0186:1
      FORGETSPACE(DLNK);                                                            08947000 T  0190:2
SPIT: IF BUFF≠0 THEN                                                                08947100 T  0191:2
 $ SET OMIT = NOT(PACKETS)                                                          08947199 T  0192:1
      IF UNITNO GEQ 32 THEN                                                         08947200 T  0192:1
      BEGIN                                                                         08947300 T  0194:1
           MOVE(9,BUFF+1,BUFF); SPOUTER(BUFF,UNITNO,64);                            08947400 T  0194:3
      END ELSE                                                                      08947500 T  0198:3
                                                                                                  08947300
 $ POP OMIT                                                                         08947501 T  0198:3
      FORGETSPACE(BUFF);                                                            08947600 T  0198:3
EXIT: UNLOCKTOG(SHEETMASK);                                                         08997000 T  0200:0
                                                                                                  08997000
      FORGETSPACE(S);                                                               08998000 T  0203:2
      IF TYPE≠5 THEN BEGIN KEYBOARDCOUNTER ← KEYBOARDCOUNTER-1;                     08998200 T  0204:2
                           SELECTION;                                               08998400 T  0207:0
                           KEYBOARDCOUNTER ← KEYBOARDCOUNTER+1;                     08998600 T  0208:1
                     END;                                                           08998800 T  0209:2
                                                                                                  08998200
END SHEETDIDDLER;                                                                   08999000 T  0209:2
                                                                                                  08851000
                                                                                    SIZE= 0210 WORDS
```

```
                $ SET OMIT = NOT(DCSPO AND DATACOM )                                                    08999999 T  0000:0
                $ SET OMIT = NOT(DISKLOG)                                                               09299999 T  0000:0
               PROCEDURE WHATINTRNSIC(BUFF); VALUE BUFF; REAL BUFF; FORWARD;                            09400000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00333
PRT(616) = WHATINTRNSIC
                $ SET OMIT = NOT(AUXMEM)                                                                09400099 T  0000:0
                $ SET OMIT = NOT MONITOR                                                                09410100 T  0000:0
                $ SET OMIT = NOT AUXMEM                                                                 09433590 T  0000:0
               PROCEDURE INTRINSICTABLEBUILDER(FH); VALUE FH; REAL FH;                                  09500000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00333
                  BEGIN                                                                                 09500500 T  0000:0
                  % WHEN CALLED WITH FH= (-1), TRANSFER TO AUXMEM ONLY                                  09500510 T  0000:0
                  REAL DISKADDR=+1,T=+2,INTLOC=+3,T17SIZE=+4,MAXINT=+5;                                 09501000 T  0000:0
STACK(F+1) = DISKADDR
STACK(F+2) = T
STACK(F+3) = INTLOC
STACK(F+4) = T17SIZE
STACK(F+5) = MAXINT
                $ SET OMIT = NOT(AUXMEM)                                                                09501500 T  0000:0
               P(0, 0, 0, 0, 0);                                                                        09504570 T  0000:0
                  IF (T:=FH.[FF])=0 THEN T:=SPACE(30);                                                  09505000 T  0001:1
                $ SET OMIT = NOT(AUXMEM)                                                                09505100 T  0005:3
                  DISKWAIT(-T, 30, DISKADDR:=M[FH INX 10]);                                             09505500 T  0005:3
                  MAXINT  := M[T] + 1; % NUMBER OF INTRINSICS + 1                                       09505600 T  0009:0
                  T17SIZE := M[T INX 17].[8:10]+1; % INTR.#17 SIZE+1WD.FOR DISK.ADDR.                   09505700 T  0011:0
                  FORGETSPACE(T);                                                                       09505750 T  0014:0
                  INTRNSC:=[M[INTLOC:=GETSPACE(MAXINT+T17SIZE,INTARRAYAREAV,1)+2]&                      09506000 P  0014:3
                    (MAXINT+T17SIZE)[8:38:10]; % SPACE FOR INTRINSIC TABLE + INT.#17                     09506100 T  0018:0
                  DISKWAIT(-(INTRNSC INX 0),MAXINT,DISKADDR);                                           09506500 T  0020:0
                  M[INTRNSC INX NOT 0] := 0; MAXINT := MAXINT -1;                                       09507000 T  0022:1
                  FOR T := 1 STEP 1 UNTIL MAXINT DO                                                     09507500 T  0026:0
                     INTRNSC[T]:=NABS((P(*P(DUP),DUP),[8:10]+INTSIZE) &                                 09508000 T  0027:0
                       (P(XCH) INX 0 + DISKADDR)[6:21:27]);                                             09508500 T  0029:1
                  DISKWAIT(-(INTLOC:=INTLOC+MAXINT+2),(T17SIZE-1),INTRNSC[17],[6:27]);                  09508600 T  0034:1
                  INTRNSC[17] := (*P(DUP))&INTLOC[CTC]; % MARK PRESENT                                  09508700 T  0038:2
                  M[INTLOC-1]:=0&(T17SIZE-1)[CTF]; % DUMMY MARKER FOR DUMP/ANALYZE                       09508800 T  0040:2
                  DISKADDR:=0&1[4:47:1];                                                                09509000 T  0043:2
                  INTRNSC[2]:=*P(DUP) OR DISKADDR;                                                      09509500 T  0045:1
                  FOR T:=18 STEP 1 UNTIL 20 DO INTRNSC[T]:=*P(DUP) OR DISKADDR;                         09510000 T  0047:1
                $ SET OMIT = NOT(AUXMEM)                                                                09510500 T  0052:1
                  INTSIZE:=(INTRNSC[0] + 3 ) DIV 4;                                                     09534500 T  0052:1
                $ SET OMIT = NOT(PACKETS)                                                               09534999 T  0054:1
                  T:=SPACE(15); WHATINTRNSIC(T);                                                        09535000 T  0054:1
                  STREAM(S:=T,D:=3);                                                                    09535100 T  0057:1
                  BEGIN                                                                                 09535200 T  0058:1
                       SI:=S; DI:=DI+4; % CMBIT IN M[3],[1:1]                                           09535300 T  0058:1
                       63(IF SC="." THEN JUMP OUT; SI:=SI+1); S:=SI;                                    09535400 T  0058:3
                        4(SI:=SI+1; IF SC="." THEN JUMP OUT);                                           09535500 T  0060:3
                       IF TOGGLE THEN ELSE SI:=S; SI:=SI+1;                                             09535600 T  0062:2
                       3(IF SC<"0" THEN JUMP OUT; TALLY:=TALLY+1; SI:=SI+1);                            09535700 T  0063:2
                       S:=TALLY; SI:=SI-S; DI:=DI-S; DS:=S CHR;                                         09535800 T  0065:2
                  END;                                                                                  09535900 T  0067:1
                                                                                                                    09535200
                  FORGETSPACE(T);                                                                       09536000 T  0067:2
                $ POP OMIT                                                                              09536001 T  0068:1
                  END INTRINSIC TABLE BUILDER;                                                          09537000 T  0068:1
                                                                                                                    09500500
```

SIZE= 0069 WORDS

```
                PROCEDURE CHANGEINTRINSICFILE(BUFF); VALUE BUFF; REAL BUFF;%                    09600000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00336
               BEGIN REAL A,B,IOD,I,J,K,L;                                                      09601000 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
STACK(F+3) = IOD
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = K
STACK(F+7) = L
               REAL FH,T,IT; LABEL EXIT,WITHOUT;                                                09602000 T  0000:0
STACK(F+10) = FH
STACK(F+11) = T
STACK(F+12) = IT
                    REAL SIZE=I,DISKADDR=T,LOC=IT,WI=J;                                         09602100 T  0000:0
STACK(F+4) = SIZE
STACK(F+11) = DISKADDR
STACK(F+12) = LOC
STACK(F+5) = WI
                    BOOLEAN SUBROUTINE NULLMIX;%                                                09603000 T  0000:0
                    BEGIN POLISH(1);%                                                           09604000 T  0001:0
                         IF INTSIZE≠0 THEN BEGIN INTSIZE ← 0;%                                  09605000 T  0001:1
                              FOR I←1 STEP 1 UNTIL MIXMAX DO%                                   09606000 T  0003:1
                              IF JARROW[I]≠0 THEN%                                              09607000 T  0004:0
                              IF NOT (JAR[I,9].SYSJOBF) THEN % NOT "SYSTEM" JOB                 09608000 T  0005:0
                              BEGIN P(DEL, 0); I ← MIXMAX; END;%                                09611000 T  0007:1
                                                                                                                    09611000
                              IF NOT P(DUP) THEN INTSIZE ← (INTRNSC[0]+3) DIV 4;%               09612000 T  0011:1
                         END;%                                                                  09613000 T  0014:1
                                                                                                                    09605000
                         NULLMIX ← POLISH;%                                                     09614000 T  0014:1
                    END NULLMIX;%                                                               09615000 T  0014:2
                                                                                                                    09604000
                    SUBROUTINE FORGETEM;%                                                       09616000 T  0014:3
                    BEGIN SLEEP([TOGLE],STOREMASK); LOCKTOG(STOREMASK);                         09617000 T  0015:0
                                                                                                                    09617000
                         WHILE (K ← M[L]).[CF]≠0 DO%                                            09618000 T  0020:0
                         BEGIN IF K>0 THEN%                                                     09619000 T  0023:0
                              IF K.[3:12]=@700 THEN%                                            09620000 T  0023:3
                                FORGETSPACE(L+2);%                                              09621000 T  0025:2
                              L ← K.[CF];%                                                      09622000 T  0027:1
                         END;%                                                                  09623000 T  0028:2
                                                                                                                    09619000
                         UNLOCKTOG(STOREMASK);                                                  09624000 T  0029:0
                                                                                                                    09624000
$ SET OMIT = NOT(AUXMEM)
                         FORGETSPACE(INTRNSC INX 0); INTRNSC←0                                  09624100 T  0032:2
                    END FORGETEM;%                                                              09625000 T  0034:0
                                                                                                                    09617000
                    DEFINE ERROR = GO TO EXIT#;%                                                09626000 T  0035:0
                         SLEEP([TOGLE], FREEMASK); INTFREE ← FALSE;%                            09630000 T  0035:0
                         T ← BUFF;%                                                             09631000 T  0040:3
                         NAMEID(A,T); NAMEID(B,T); NAMEID(B,T);%                                09632000 T  0041:2
                         IF (FH:=DIRECTORYSEARCH(A,B,17))=0 THEN ERROR;                         09633000 T  0044:2
                         IF (J←M[FH+4].[36:6])≠0 THEN                                           09633100 T  0047:1
                              IF J≠DCINTYPE AND J≠TSSINTYPE THEN                                09633200 T  0050:1
                    BEGIN     % DONT ALLOW CI ON KNOWN NON-INTRINSICS FILE                      09633300 T  0052:2
```

```
                        STREAM(A,B,NT1:=BUFF,[15:15]-1);                                    09633400 T  0053:0
                        BEGIN DS:=2LIT"# "; SI:=LOC A;                                      09633500 T  0055:1
                             SI:=SI+1; DS:=7CHR; DS:=LIT"/";                                09633600 T  0056:0
                             SI:=SI+1; DS:=7 CHR;                                           09633700 T  0057:0
                             DS:=24 LIT" NOT AN INTRINSICS FILE.";                          09633800 T  0057:2
                        END;                                                                09633900 T  0060:3
                                                                                                        09633500
                        FORGETSPACE(FH);                                                    09634000 T  0061:0
                        FORGETSPACE(DIRECTORYSEARCH(A,B,16));                               09634100 T  0061:3
                        ERROR;                                                              09634200 T  0063:2
                   END;                                                                     09634300 T  0065:0
                                                                                                        09633300
                   IF NOT NULLMIX THEN COMPLEXSLEEP(NULLMIX);                               09635000 T  0065:0
07427630      ACCIDENTAL ENTRY AT NULLMIX
                   IF INTRNSC≠0 THEN FORGETEM;                                              09636000 T  0072:0
              $ SET OMIT = SHAREDISK
                   IF MCPFREE=0 THEN SLEEP([TOGLE],MCPMASK);                                09637000 T  0075:0
                   LOCKTOG(MCPMASK);                                                        09638000 T  0078:1
                                                                                                        09638000
              $ POP OMIT                                                                    09638001 T  0081:3
                   T:=SPACE(30);                                                            09639000 T  0081:3
              OKSEGZEROWRITE:=TRUE;                                          %204-         09639001 C  0084:0
                   DISKWAIT(-T,-30,0);                                                      09640000 T  0084:3
                   I:=T+13+5×SYSNO;                                                         09641000 T  0086:2
                   IF (IT:=DIRECTORYSEARCH(M[I],M[I+1],16))≠0 THEN                          09642000 T  0088:3
                   FORGETSPACE(IT);                                                         09643000 T  0093:0
                   M[I]:=A;                                                                 09644000 T  0094:1
                   M[I+1]:=B;                                                               09645000 T  0095:3
                   DISKWAIT(T,-30,0);                                                       09646000 T  0097:3
              OKSEGZEROWRITE:=FALSE;                                         %204-         09646001 C  0099:1
              $ SET OMIT = SHAREDISK                                                        09646999 T  0100:0
                   UNLOCKTOG(MCPMASK);                                                      09647000 T  0100:0
                                                                                                        09647000
              $ POP OMIT                                                                    09647001 T  0103:2
              $ SET OMIT = NOT(AUXMEM)                                                      09647999 T  0103:2
                   FORGETSPACE(T);                                                          09648800 T  0103:2
                   INTRINSICTABLEBUILDER(FH,[CF]);                                          09657000 T  0104:1
                   FORGETSPACE(FH);                                                         09658000 T  0105:2
                   WHATINTRNSIC(BUFF,[15:15]);                                              09659000 T  0106:1
                   STREAM(B:=BUFF,[15:15]-1); DS:=8 LIT" NEW    ";                          09670000 T  0107:2
               EXIT:  SPOUT(BUFF,[15:15]-1);%                                               09676000 T  0110:3
                   INTFREE ← TRUE;%                                                         09677000 T  0113:0
               END CHANGING INTRINSIC FILES ON USER DISK WITH MANY PRECAUTIONS;%             09679000 T  0114:3
                                                                                                        09601000
                                                                                          SIZE= 0116 WORDS
```

```
                PROCEDURE CHANGEMCP(BUFF); VALUE BUFF; REAL BUFF;                                   09679100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00340
                BEGIN                                                                               09679200 T  0000:0
                    REAL A,B,T,Z,BASE;                                                              09679300 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
STACK(F+3) = T
STACK(F+4) = Z
STACK(F+5) = BASE
                    LABEL EXIT;                                                                     09679400 T  0000:0
                    T:=BUFF;                                                                        09679800 T  0000:0
                    NAMEID(A,T); NAMEID(B,T); NAMEID(B,T);                                          09679900 T  0002:0
                 $ SET OMIT = SHAREDISK                                                             09679999 T  0005:0
                    IF MCPFREE=0 THEN SLEEP([TOGLE],MCPMASK);                                       09680000 T  0005:0
                    LOCKTOG(MCPMASK);                                                               09680100 T  0008:1
                                                                                                                09680100
                 $ POP OMIT                                                                         09680101 T  0011:3
                    Z:=SPACE(30);                                                                   09680200 T  0011:3
                OKSFGZEROWRITE:=TRUE;                                                 %204-         09680229 C  0014:0
                    DISKWAIT(-Z,-30,0);                                                             09680300 T  0014:3
                    BASE:=Z+10+5×SYSNO;                                                             09680400 T  0016:2
                    IF (A EQV M[BASE])≠NOT 0 OR                                                     09680500 T  0018:3
                       (B EQV M[BASE+1])≠NOT 0 THEN                                                 09680600 T  0021:0
                    BEGIN                                                                           09680700 T  0024:0
                         IF (T:=DIRECTORYSEARCH(A,B,17))=0 THEN                                     09680800 T  0024:2
                         BEGIN;                                                                     09680900 T  0026:3
                              STREAM(A:=[A],T:=BUFF.[15:15]-1);                                     09681000 T  0027:1
                              BEGIN DS:=13 LIT"#NO MCP FILE ";SI:=A;SI:=SI+1;                       09681100 T  0029:1
                                   DS:=7 CHR;DS:=LIT"/";SI:=SI+1;DS:=7 CHR;                         09681200 T  0031:3
                              DS←LIT"←";                                                            09681250 T  0033:0
                              END;                                                                  09681300 T  0033:2
                                                                                                                09681100
                              GO TO EXIT;                                                           09681400 T  0033:3
                         END;                                                                       09681500 T  0036:0
                                                                                                                09680900
                         IF (NT1←M[T+4].[36:6])≠0 THEN IF NT1≠MCPTYPE THEN                          09681505 T  0036:0
                         BEGIN     % DONT ALLOW CM ON KNOWN NON-MCP FILE                            09681510 T  0040:1
                              STREAM(A:=[A],T:=BUFF.[15:15]-1);                                     09681515 T  0040:3
                              BEGIN DS:=2LIT"# "; SI:=A; SI:=SI+1;                                  09681520 T  0042:3
                                   DS:=7CHR; DS:=LIT"/"; SI:=SI+1;                                  09681525 T  0043:3
                                   DS:=7CHR; DS:=12LIT" NOT AN MCP←";                               09681530 T  0044:3
                              END;                                                                  09681535 T  0046:3
                                                                                                                09681520
                              FORGETSPACE(T);                                                       09681540 T  0047:0
                              FORGETSPACE(DIRECTORYSEARCH(A,B,16));                                 09681545 T  0047:3
                              GO TO EXIT;                                                           09681550 T  0049:2
                         END;                                                                       09681555 T  0050:0
                                                                                                                09681510
                         IF M[BASE+2]-2≠MCPBASE THEN                                                09681600 T  0050:0
                         FORGETSPACE(DIRECTORYSEARCH(M[BASE],M[BASE+1],16));                        09681650 T  0052:2
                         M[BASE]:=A;                                                                09681700 T  0056:3
                         M[BASE+1]:=B;                                                              09681800 T  0058:1
                         M[BASE+2]:=M[T+10];                                                        09681900 T  0060:1
                $ SET OMIT = NOT(AUXMEM)                                                            09681909 T  0063:2
                         FORGETSPACE(T);                                                            09682000 T  0063:2
                    END;                                                                            09682100 T  0064:1
                                                                                                                09680700
```

```
    STREAM(A:=[A],T:=BUFF,[15:15]-1);                                    09682200 T  0064:1
    BEGIN DS:=18 LIT " NEXT MCP WILL BE ";S1:=A;S1:=S1+1;                09682300 T  0066:1
          DS:=7 CHR;DS:=LIT"/";S1:=S1+1;DS:=7 CHR;                       09682400 T  0069:1
          DS←LIT"←";                                                     09682450 T  0070:2
    END;                                                                 09682500 T  0071:0
                                                                                     09682300
    M[3]←NABS(*P(DUP)); % SET FLAG FOR WM                                09682550 T  0071:1
EXIT:                                                                    09682600 T  0073:1
    DISKWAIT(Z,-30,0);                                                   09682610 T  0073:1
OKSEGZEROWRITE:=FALSE;                                          %204-    09682611 C  0074:3
 $ SET OMIT = NOT(NOT SHAREDISK)                                         09682619 T  0075:2
    UNLOCKTOG(MCPMASK);                                                  09682620 T  0075:2
                                                                                     09682620
 $ POP OMIT                                                              09682621 T  0079:0
    FORGETSPACE(Z);                                                      09682700 T  0079:0
    SPOUT(BUFF,[15:15]-1);                                               09682800 T  0079:3
END CHANGING OF THE MCP;                                                 09683100 T  0082:0
                                                                                     09679200
                                                                                SIZE= 0084 WORDS
```

```
   BOOLEAN PROCEDURE SYSTEMFILE(A,B); VALUE A,B; REAL A,B;%                    09700000 T  0000:0
                                                        START OF REL SEGMENT; DISK ADDRESS = 00343
   BEGIN LABEL DISK,LOG,TRUTH,DIR,SYS,REM,DECK,MASK,TEST;                      09701000 T  0000:0
         LABEL DMP;                                                            09701500 T  0000:0
         LABEL MAINT;                                                          09701550 T  0000:0
$ SET OMIT = NOT(STATISTICS)                                                   09701599 T  0000:0
         DEFINE T=P(TRUTH)#;%                                                  09702000 T  0000:0
         IF (B EQV P(DISK))=T THEN%                                            09703000 T  0000:0
              P(((A EQV P(DIR))=T) OR                                          09704000 T  0001:2
              ((A EQV P(LOG))=T) OR                                            09704100 T  0003:1
              ((A EQV P(DMP))=T))                                              09704500 T  0004:3
         ELSE IF (B EQV P(LOG))=T THEN%                                        09705000 T  0006:0
                   P(((A EQV P(SYS))=T) %                                      09706000 T  0008:0
$ SET OMIT = SHAREDISK                                                         09706049 T  0009:3
                  OR ((A EQV P(MAINT))=T)%                                     09706050 T  0009:3
                  OR ((A EQV P(REM))=T)%                                       09706100 T  0011:0
$ POP OMIT                                                                     09706101 T  0012:2
                                                )%                             09706150 T  0012:2
$ SET OMIT = NOT(SHAREDISK)                                                    09706199 T  0012:3
         ELSE IF (A EQV P(DECK))=T THEN%                                       09707000 T  0012:3
              P(((B AND P(MASK)) EQV P(TEST))=T)%                              09708000 T  0014:2
$ SET OMIT = NOT(STATISTICS)                                                   09708099 T  0016:3
         ELSE P(0);%                                                           09709000 T  0016:3
         P(RTN);%                                                              09710000 T  0017:2
    DISK :::  "DISK    ";%                                                     09711000 T  0017:3
    LOG  :::  "LOG     ";%                                                     09712000 T  0019:0
    TRUTH:::  @377777777777777;%                                               09713000 T  0020:0
    DIR  :::  "DIRCTRY";%                                                      09715000 T  0021:0
    SYS  :::  "SYSTEM ";%                                                      09716000 T  0022:0
    REM  :::  "REMOTE ";%                                                      09717000 T  0023:0
    DECK :::  "DECK    ";%                                                     09718000 T  0024:0
    MASK :::  @7700000007777;%                                                 09719000 T  0025:0
    TEST :::  @1200000003714;%                                                 09720000 T  0026:0
    DMP  :::  "DMPAREA";%                                                      09720500 T  0027:0
    MAINT:::  "MAINT   ";%                                                     09720650 T  0028:0
$ SET OMIT = NOT(STATISTICS)                                                   09720699 T  0029:0
    END;%                                                                      09721000 T  0029:0
                                                                                        09701000
                                                                                SIZE= 0030 WORDS
```

```
                $ SET OMIT = NOT(DEBUGGING)                                    09999999 T  0000:0
                $ SET OMIT = NOT(WORKSET);                                     12200000 T  0000:0
                                                                               12200500 T  0000:0
              PROCEDURE WKSETVALUES(KTRX); VALUE KTRX; REAL KTRX;              12201000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00344
PRT(617) = WKSETVALUES
                BEGIN                                                          12201500 T  0000:0
                                                                               12202000 T  0000:0
                % ROUTINE FOR HANDLING KEYIN WORKSET REQUESTS.                 12202500 T  0000:0
                                                                               12203000 T  0000:0
                REAL                                                           12203500 T  0000:0
                BUFF,                                                          12204000 T  0000:0
STACK(F+1) = BUFF
                CYCLETOG,                                                      12204500 T  0000:0
STACK(F+2) = CYCLETOG
                ERRORTOG,                                                      12205000 T  0000:0
STACK(F+3) = ERRORTOG
                INS,                                                           12205500 T  0000:0
STACK(F+4) = INS
                INSTRUCT,                                                      12206000 T  0000:0
STACK(F+5) = INSTRUCT
                KTR,                                                           12206500 T  0000:0
STACK(F+6) = KTR
                $ SET OMIT = NOT(WORKSETMONITOR) OR OMIT                       12207000 T  0000:0
                MONTOG,                                                        12207500 T  0000:0
STACK(F+7) = MONTOG
                $ POP OMIT % WORKSETMONITOR                                    12208000 T  0000:0
                N,                                                             12208500 T  0000:0
STACK(F+10) = N
                NAM,                                                           12209000 T  0000:0
STACK(F+11) = NAM
                NEXTNAME,                                                      12209500 T  0000:0
STACK(F+12) = NEXTNAME
                OLAYTOG,                                                       12210000 T  0000:0
STACK(F+13) = OLAYTOG
                STARTING,                                                      12210500 T  0000:0
STACK(F+14) = STARTING
                TOLTOG,                                                        12211000 T  0000:0
STACK(F+15) = TOLTOG
                USETOG,                                                        12211500 T  0000:0
STACK(F+16) = USETOG
                VALU,                                                          12212000 T  0000:0
STACK(F+17) = VALU
                ZZSTA;                                                         12212500 T  0000:0
STACK(F+20) = ZZSTA
                                                                               12213000 T  0000:0
                ARRAY NAMS[*];                                                 12213500 T  0000:0
STACK(F+21) = NAMS
                                                                               12214000 T  0000:0
                LABEL NU, NEW, SKAN, SKP, ERROR;                               12214500 T  0000:0
                                                                               12215000 T  0000:0
                DEFINE                                                         12215500 T  0000:0
                OLAYINDX        = 1#, % CODE FOR "OLAY RATIO"                  12216000 T  0000:0
                PRIORINDX       = 2#, % CODE FOR "PRIORITY",                   12216500 T  0000:0
                ETIMEINDX       = 3#, % CODE FOR "ELAPSED TIME",               12217000 T  0000:0
                COREINDX        = 4#, % CODE FOR "CORE USAGE"                  12217500 T  0000:0
                SAVEINDX        = 5#, % CODE FOR "SAVE CORE USAGE"             12218000 T  0000:0
```

```
   INFOSIZE        = 5#; % NUMBER OF ENTRIES FOR EACH MIX                          12218500 T  0000:0
                                                                                   12219000 T  0000:0
   DEFINE PRINTDIGIT = % OUTPUT ROUTINE FOR STREAM STATEMENT                       12219500 T  0000:0
      DV:=DI; DS:=5DEC; DI:=DV; DS:=4FILL;                                         12220000 T  0000:0
      DI:=DV; SI:=DV; 5(IF SC=" " THEN SI:=SI+1 ELSE DS:=CHR);                     12220500 T  0000:0
      DS:=LIT",*#;                                                                 12221000 T  0000:0
                                                                                   12221500 T  0000:0
   BUFF  := KTRX.[15:15]; % KEYIN BUFFER LOCATION                                  12222000 T  0000:0
   KTR   := KTRX.[15:33]; % LOCATION OF REQUEST IN KEYIN BUFFER                    12222500 T  0005:2
   ZZSTA := 0 & M[BUFF-2][9:9:9]; % REMOTE STATION                                12223000 T  0006:3
                                                                                   12223500 T  0009:3
SKAN: % SCAN INPUT BUFFER FOR REQUEST ANALYSIS                                     12224000 T  0009:3
                                                                                   12224500 T  0009:3
   STREAM(NAM :=0, VALU:=(-1), LOCN:=0, NEXTNAME:="*" :                           12225000 T  0009:3
         TOG:=0, EQLTOG:=0, T:=0,  KTR);                                           12225500 T  0011:1
      BEGIN                                                                        12226000 T  0012:3
      SI:=KTR; GO TO L2;                                                           12226500 T  0012:3
 L0:  63(IF SC=ALPHA THEN SI:=SI+1 ELSE JUMP OUT TO L2);                           12227000 T  0013:1
 L1:  SI:=SI+1;                                                                    12227500 T  0015:1
 L2:  IF SC="*" THEN GO TO L3; % END OF RECORD                                     12228000 T  0015:2
      IF SC=" " THEN GO TO L1; % IGNORE BLANKS                                     12228500 T  0016:1
      IF SC="," THEN GO TO L1; % COMMA IS OPTIONAL                                 12229000 T  0017:0
      IF SC="=" THEN           % SET "EQUAL" TOGGLE                               12229500 T  0017:3
         BEGIN                                                                     12230000 T  0018:1
         TALLY:=1; EQLTOG:=TALLY; GO TO L1;                                        12230500 T  0018:1
         END;                                                                      12231000 T  0019:0
                                                                                                12230000
      IF SC=ALPHA THEN ELSE GO TO XX0; % NO OTHER SPECIAL CHR.ALLOWED              12231500 T  0019:0
      % TREAT STRING AS NUMERIC ONLY IF PRECEEDED BY "="                          12232000 T  0020:0
      EQLTOG(IF SC GEQ "0" THEN IF SC LEQ "9" THEN JUMP OUT TO L4);                12232500 T  0020:0
 L3:  TOG(DI:=LOC NEXTNAME; JUMP OUT TO LL1); % USE "NEXTNAME" 2ND.PASS            12233000 T  0022:1
      DI:=LOC NAM;             % USE "NAM" ON FIRST PASS                         12233500 T  0023:3
      GO LL1; LL0: GO L0; XX0: GO TO XXIT; LL1: % BRANCH POINT                     12234000 T  0024:0
      DI:=DI+5; % NAME STORED IN LAST 3 CHRS.                                     12234500 T  0024:3
      IF SC="*" THEN % END OF RECORD,DONT MOVE SI                                  12235000 T  0025:0
         BEGIN                                                                     12235500 T  0025:2
         DS:=3LIT"00*"; GO TO XXIT;                                                12236000 T  0025:2
         END;                                                                      12236500 T  0026:2
                                                                                                12235500
      T:=SI; DS:=CHR;                                                              12237000 T  0026:2
      2(IF SC=ALPHA THEN DS:=CHR ELSE DS:=LIT" ");                                 12237500 T  0027:0
      TOG(SI:=T; JUMP OUT TO XXIT); % BRANCH OUT ON 2ND.PASS                       12238000 T  0029:0
      TALLY:=1; TOG:=TALLY;          % SET SECOND PASS TOGGLE                     12238500 T  0030:2
      GO TO LL0;                                                                   12239000 T  0031:0
      % NUMERICS CONVERTED AT "L4"                                                12239500 T  0031:1
 L4:  LOCN:=SI; SI:=SI+1; TALLY:=0; EQLTOG:=TALLY; TALLY:=1;                       12240000 T  0031:1
      7(IF SC GEQ "0" THEN IF SC LEQ "9" THEN;                                     12240500 T  0032:2
      IF TOGGLE THEN ELSE JUMP OUT; SI:=SI+1; TALLY:=TALLY+1);                     12241000 T  0033:3
      SI:=LOCN; T:=TALLY; DI:=LOC VALU; DS:=T OCT; GO TO LL0;                      12241500 T  0035:2
XXIT: LOCN:=SI;                                                                    12242000 T  0037:0
      END STREAM STATEMENT;                                                        12242500 T  0037:1
                                                                                                12226000
                                                                                   12243000 T  0037:2
   NEXTNAME := P; % VALUE OF NEXT ITEM IN REQUEST                                  12243500 T  0037:2
   KTR      := P; % ADDRESS OF NEXT ITEM IN KEYIN BUFFER                           12244000 T  0038:0
   VALU     := P; % NUMERIC VALUE OF REQUEST (-1 IF NONE GIVEN)                    12244500 T  0038:2
   NAM      := P; % REQUEST ITEM                                                   12245000 T  0039:0
```

```
   IF NAM="↵" THEN % NULL INPUT, TREAT AS "LIST" REQUEST                    12245500 T  0039:2
      BEGIN                                                                 12246000 T  0039:2
NU:   USETOG := TOLTOG := OLAYTOG := CYCLETOG := 1;                         12246500 T  0040:1
      GO TO NEW;                                                            12247000 T  0040:3
      END                                                                   12247500 T  0043:0
                                                                            12248000 T  0043:2
                                                                                        12246500
   ELSE IF USETOG = 3 THEN % SETTING NEW OPTIONS                            12248500 T  0043:2
      BEGIN                                                                 12249000 T  0044:3
      IF (N:=(IF (NAM="OLA" AND VALU=(-1)) THEN OLAYINDX ELSE               12249500 T  0045:1
             IF NAM="PRI" THEN PRIORINDX ELSE                               12250000 T  0048:2
             IF NAM="TIM" THEN ETIMEINDX ELSE                               12250500 T  0050:2
             IF NAM="COR" THEN COREINDX  ELSE                               12251000 T  0052:2
             IF NAM="SAV" THEN SAVEINDX  ELSE 0)) NEQ 0 THEN                12251500 T  0054:2
                INSTRUCT := 0 & INSTRUCT[8:4:40] & N[4:44:4]                12252000 T  0057:3
         ELSE GO TO SKP; % MAY NOT BE PART OF "USE" COMMAND                 12252500 T  0059:3
      END % IF USETOG = 3                                                   12253000 T  0061:0
                                                                                        12249000
   ELSE                                                                     12253500 T  0061:0
SKP: IF (NAM="ON " OR NAM="OFF") THEN                                       12254000 T  0061:0
      BEGIN                                                                 12254500 T  0068:3
      STARTING := 1 + (NAM="OFF");                                          12255000 T  0069:1
      GO TO NU;                                                             12255500 T  0071:0
      END                                                                   12256000 T  0074:0
                                                                                        12254500
   ELSE IF NAM="USE" THEN % SETTING NEW VALUES                              12256500 T  0074:0
      BEGIN                                                                 12257000 T  0075:1
      INSTRUCT := 0;                                                        12257500 T  0075:3
      USETOG := 3;                                                          12258000 T  0076:2
      END                                                                   12258500 T  0077:1
                                                                                        12257000
ELSE IF NAM="OPT" THEN USETOG := 1 % LISTING OPTIONS                        12259000 T  0077:1
ELSE IF NAM="TOL" THEN     % TOLERANCE FOR OPTIONS                          12259500 T  0080:2
   BEGIN                                                                    12260000 T  0083:3
   TOLTOG := 1;                                                             12260500 T  0084:1
   IF VALU GEQ 0 THEN                                                       12261000 T  0085:0
      BEGIN                                                                 12261500 T  0085:3
      IF VALU GTR 100 THEN GO TO ERROR;                                     12262000 T  0086:1
      WKSETOLERANCE := VALU × 0.01;                                         12262500 T  0087:2
      END;                                                                  12263000 T  0089:1
                                                                                        12261500
   END                                                                      12263500 T  0089:1
                                                                                        12260000
ELSE IF NAM = "OLA" THEN                                                    12264000 T  0089:1
   BEGIN                                                                    12264500 T  0092:3
   OLAYTOG := 1;                                                            12265000 T  0093:1
   IF VALU GEQ 0 THEN                                                       12265500 T  0094:0
      BEGIN                                                                 12266000 T  0094:3
      WKSETMAXOLAY := VALU/100;                                             12266500 T  0095:1
      END;                                                                  12267000 T  0097:0
                                                                                        12266000
   END                                                                      12267500 T  0097:0
                                                                                        12264500
ELSE IF NAM="CYC" THEN % CYCLE TIME                                         12268000 T  0097:0
   BEGIN                                                                    12268500 T  0099:3
   CYCLETOG := 1;                                                           12269000 T  0100:1
   IF VALU GEQ 0 THEN % SETTING NEW VALUE                                   12269500 T  0101:0
```

```
          BEGIN                                                                                  12270000 T  0101:3
NEW:      IF WKSETCYCLETIME=0 THEN % NO PREVIOUS VALUE                                           12270500 T  0102:1
             BEGIN                                                                               12271000 T  0103:1
             STFIRST := 0; STNEXT := 0;                                                          12271500 T  0103:3
             IF WKSETINSTRUCT=0 THEN % SET DEFAULT OPTIONS                                       12272000 T  0107:3
                BEGIN                                                                            12272500 T  0108:3
                WKSETINSTRUCT := PRIORINDX &                                                     12273000 T  0109:1
                                 OLAYINDX [40:44:4] &                                            12273500 T  0110:0
                                 COREINDX [36:44:4] &                                            12274000 T  0111:0
                                 ETIMEINDX[32:44:4] &                                            12274500 T  0112:0
                                 SAVEINDX [28:44:4];                                             12275000 T  0113:0
                END;                                                                             12275500 T  0114:2
                                                                                                                    12272500
             IF WKSETOLERANCE=0 THEN WKSETOLERANCE := 0.10;                                      12276000 T  0114:2
             IF WKSETMAXOLAY=0 THEN WKSETMAXOLAY := 0.40;                                        12276500 T  0117:1
             END; % IF NO PREVIOUS VALUE                                                         12277000 T  0120:0
                                                                                                                    12271000
          IF STARTING NEQ 0 THEN % "WK ON" OR "WK OFF"                                           12277500 T  0120:0
             BEGIN                                                                               12278000 T  0120:3
             IF STARTING = 2 THEN % "OFF"                                                        12278500 T  0121:1
               WKSETCYCLETIME := NABS(WKSETCYCLETIME) ELSE                                       12279000 T  0122:0
                BEGIN % "ON"                                                                     12279500 T  0124:1
                WKSETCYCLETIME:=                                                                 12280000 T  0128:0
                  (IF WKSETCYCLETIME=0 THEN 20x64 ELSE                                           12280500 T  0128:2
                   ABS(WKSETCYCLETIME));                                                         12281000 T  0131:1
                END; % IF STARTING = 1                                                           12281500 T  0132:2
                                                                                                                    12279500
             STARTING := 0;                                                                      12282000 T  0132:2
             END; % IF STARTING GTR 0                                                            12282500 T  0133:1
                                                                                                                    12278000
                IF VALU GEQ 0 THEN WKSETCYCLETIME := VALUx64;                                    12283000 T  0133:1
                IF WKSETCYCLETIME LEQ 0 THEN WKSETNOSELECT:=0; % TELL SELECTRUN                  12283500 T  0136:1
                END; % IF VALU GEQ 0                                                             12284000 T  0140:1
                                                                                                                    12270000
             END % IF NAM="CYC"                                                                  12284500 T  0140:1
                                                                                                                    12268500
          $ SET OMIT = NOT(WORKSETMONITOR) OR OMIT                                               12285000 T  0140:1
            ELSE IF NAM="MON" THEN                                                               12285500 T  0140:1
                BEGIN                                                                            12286000 T  0141:2
                IF (VALU LSS 0) OR (VALU GTR 1) THEN GO TO ERROR;                                12286500 T  0142:0
                WKSETMONITOR :=VALU; MONTOG:=1;                                                  12287000 T  0144:2
                END                                                                              12287500 T  0147:3
                                                                                                                    12286000
          $ POP OMIT % WORKSETMONITOR                                                            12288000 T  0147:3
            ELSE GO TO ERROR;                                                                    12288500 T  0147:3
                                                                                                 12289000 T  0147:3
            IF NAM NEQ "←" THEN                                                                  12289500 T  0147:3
                IF NEXTNAME NEQ "←" THEN                                                         12290000 T  0148:2
                   GO TO SKAN;                                                                   12290500 T  0149:3
                                                                                                 12291000 T  0150:1
            IF FALSE THEN                                                                        12291500 T  0150:1
ERROR:                                                                                           12292000 T  0150:2
            ERRORTOG:=1;                                                                         12292500 T  0151:0
                                                                                                 12293000 T  0151:3
            IF USETOG THEN                                                                       12293500 T  0151:3
                BEGIN                                                                            12294000 T  0152:0
                IF USETOG=3 THEN % NEW OPTIONS SET                                               12294500 T  0152:2
```

```
      IF INSTRUCT NEQ 0 THEN % NEW INSTRUCTIONS OBTAINED                          12295000 T  0153:1
         BEGIN                                                                    12295500 T  0154:2
         WHILE (INSTRUCT.[44:4]=0) DO INSTRUCT:=INSTRUCT.[4:40];                  12296000 T  0155:0
         WKSETINSTRUCT := INSTRUCT;                                               12296500 T  0160:0
         END;                                                                     12297000 T  0161:1
                                                                                                  12295500
   INSTRUCT := WKSETINSTRUCT;                                                     12297500 T  0161:1
   NAMS := [M[BUFF INX 20]]&20[8:38:10]; % USE PART OF KEYIN BUFFER               12298000 T  0162:1
   NAMS[0]:=0;                                                                    12298500 T  0165:0
   N:=(-1);                                                                       12299000 T  0166:1
   WHILE (INS := INSTRUCT.[44:4]) GTR 0 DO                                        12299500 T  0167:1
      BEGIN                                                                       12300000 T  0169:2
      INSTRUCT := INSTRUCT.[4:40];                                                12300500 T  0169:2
      NAMS[N:=N+1] :=                                                             12301000 T  0171:1
      (IF INS=1 THEN "OLAY    " ELSE                                              12301500 T  0172:3
       IF INS=2 THEN "PRIORTY" ELSE                                               12302000 T  0174:3
       IF INS=3 THEN "TIME    " ELSE                                              12302500 T  0176:3
       IF INS=4 THEN "CORE    " ELSE                                              12303000 T  0178:3
       IF INS=5 THEN "SAVCOR " ELSE                                               12303500 T  0180:3
       "UNKNOWN") & 1[5:47:1];                                                    12304000 T  0182:3
      NAMS[N+1]:=0;                                                               12304500 T  0184:2
      END;                                                                        12305000 T  0186:1
                                                                                                  12300000
   END; % IF USETOG                                                               12305500 T  0193:0
                                                                                                  12294000
STREAM(CYCLETOG, NEG:=(WKSETCYCLETIME.[1:1]),                                     12306000 T  0193:0
         CYC:=(ABS(WKSETCYCLETIME)/64+0.5) DIV 1,                                 12306500 T  0194:2
         ERRORTOG, VALUTOG:=(VALU GEQ 0), NAM, VALU,                              12307000 T  0196:3
         OLAYTOG, OLA:=(WKSETMAXOLAY*100+0.5) DIV 1,                              12307500 T  0198:1
         TOLTOG, TOL:=(WKSETOLERANCE*100+0.5) DIV 1,                              12308000 T  0200:2
$ SET OMIT = NOT(WORKSETMONITOR) OR OMIT                                          12308500 T  0202:3
         MONTOG, MON:=WKSETMONITOR,                                               12309000 T  0202:3
$ POP OMIT % WORKSETMONITOR                                                       12309500 T  0204:0
         USETOG, NM:=NAMS [NX 0, DV:=0, BUFF:=BUFF-1);                            12310000 T  0204:0
     BEGIN                                                                        12310500 T  0206:2
     DS:=4LIT" WK:";                                                              12311000 T  0206:2
     ERRORTOG(DS:=7LIT" ERROR:"; SI:=LOC NAM; SI:=SI+5; DS:=3CHR;                 12311500 T  0207:1
              VALUTOG(DS:=LIT"=": SI:=LOC VALU; DS:=8DEC;                         12312000 T  0209:3
              DV:=DI; DI:=DI-8; DS:=7FILL; DI:=DV); DS:=LIT" ");                  12312500 T  0211:1
$ SET OMIT = NOT(WORKSETMONITOR) OR OMIT                                          12313000 T  0213:1
     MONTOG(DS:=4LIT"MON=": SI:=LOC MON; PRINTDIGIT);                             12313500 T  0213:1
$ POP OMIT % WORKSETMONITOR                                                       12314000 T  0218:3
     CYCLETOG(DS:=6LIT"CYCLE=": NEG(DS:=LIT"-");                                  12314500 T  0218:3
              SI:=LOC CYC; PRINTDIGIT);                                           12315000 T  0221:2
     OLAYTOG(DS:=5LIT"OLAY=";                                                     12315500 T  0225:3
              SI:=LOC OLA; PRINTDIGIT);                                           12316000 T  0227:1
     TOLTOG(DS:=4LIT"TOL=";                                                       12316500 T  0231:2
              SI:=LOC TOL; PRINTDIGIT);                                           12317000 T  0232:3
     USETOG(SI:=NM; DS:=9LIT"OPTIONS: ";                                          12317500 T  0237:0
          L1: IF SC="0" THEN JUMP OUT;                                            12318000 T  0239:1
              SI:=SI+1; 7(IF SC=" " THEN SI:=SI+1 ELSE DS:=CHR);                  12318500 T  0240:1
              DS:=LIT","; GO TO L1);                                              12319000 T  0242:1
     DI:=DI-1; DS:=LIT")";                                                        12319500 T  0243:1
     END STREAM STATEMENT;                                                        12320000 T  0244:0
                                                                                                  12310500
  SPOUT((BUFF-1) INX (0&ZZSTA[9:9:9]));                                           12320500 T  0244:1
                                                                                  12321000 T  0244:1
```

```
    NAMS:=[M[NAM:=SPACE(30)]] & 30[8:38:10];                %143-      12321100 C  0247:2
    DISKWAIT(-NAM,30,DIRECTORYTOP+1);                       %143-      12321110 C  0251:3
    NAMS[N:=4*SYSNO+4]:=WKSFTCYCLFTIME;                     %143-      12321120 C  0253:3
    NAMS[N+1          ]:=WKSFTINSTRUCT;                     %143-      12321130 C  0256:3
    NAMS[N+2          ]:=WKSFTOLERANCE;                     %143-      12321140 C  0258:3
    NAMS[N+3          ]:=WKSFTMAXOLAY;                      %143-      12321150 C  0260:3
    DISKWAIT( NAM,30,DIRECTORYTOP+1);                       %143-      12321160 C  0262:3
    FORGETSPACE(NAM);                                       %143-      12321170 C  0264:2
END PROCEDURE WKSFTREQUESTS;                                           12321500 T  0265:1
                                                                                        12201500
                                                                                SIZE= 0267 WORDS
```

```
                    PROCEDURE WORKSET(N); VALUE N; REAL N;

                        BEGIN
                        REAL  MSCW              = -2;
STACK(F-2) = MSCW
                        REAL
                        DEVIATION,
STACK(F+1) = DEVIATION
                        INS,
STACK(F+2) = INS
                        INSTRUCT,
STACK(F+3) = INSTRUCT
                        LINK,
STACK(F+4) = LINK
                        LOC,
STACK(F+5) = LOC
                        MAXMIX,
STACK(F+6) = MAXMIX
                        MAXOLAY,
STACK(F+7) = MAXOLAY
                        MAXVALUE,
STACK(F+10) = MAXVALUE
                        MIX,
STACK(F+11) = MIX
                        NJOBS,
STACK(F+12) = NJOBS
                        PTIME,
STACK(F+13) = PTIME
                        TOTALPTIME,
STACK(F+14) = TOTALPTIME
                        OLAY,
STACK(F+15) = OLAY
                        TOTALOLAY,
STACK(F+16) = TOTALOLAY
                        STARTING,
STACK(F+17) = STARTING
                        STOPMIX,
STACK(F+20) = STOPMIX
                        SIZE,
STACK(F+21) = SIZE
                        T1,
STACK(F+22) = T1
                        T2,
STACK(F+23) = T2
                        TOTALOLAYCORE,
STACK(F+24) = TOTALOLAYCORE
                        TOTALSAVECORE,
STACK(F+25) = TOTALSAVECORE
                        TOTALSYSTEMCORE,
STACK(F+26) = TOTALSYSTEMCORE
                        VALU;
STACK(F+27) = VALU

                        ARRAY JOBINFO[*];
STACK(F+30) = JOBINFO
                        ARRAY RUNNING[*];
```

```
                                    12350000 T  0000:0
                                    12350500 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00353
                                    12351000 T  0000:0
                                    12351500 T  0000:0

                                    12352000 T  0000:0
                                    12352500 T  0000:0

                                    12353000 T  0000:0

                                    12353500 T  0000:0

                                    12354000 T  0000:0

                                    12354500 T  0000:0

                                    12355000 T  0000:0

                                    12355500 T  0000:0

                                    12356000 T  0000:0

                                    12356500 T  0000:0

                                    12357000 T  0000:0

                                    12357500 T  0000:0

                                    12358000 T  0000:0

                                    12358500 T  0000:0

                                    12359000 T  0000:0

                                    12359500 T  0000:0

                                    12360000 T  0000:0

                                    12360500 T  0000:0

                                    12361000 T  0000:0

                                    12361500 T  0000:0

                                    12362000 T  0000:0

                                    12362500 T  0000:0

                                    12363000 T  0000:0

                                    12363500 T  0000:0

                                    12364000 T  0000:0
                                    12364500 T  0000:0

                                    12365000 T  0000:0
```

```
STACK(F+31) = RUNNING

                    DEFINE
                    OLAYINDX        = 1#, % CODE FOR "OLAY RATIO"
                    PRIORINDX       = 2#, % CODE FOR "PRIORITY",
                    ETIMEINDX       = 3#, % CODE FOR "ELAPSED TIME",
                    CORENDX         = 4#, % CODE FOR "CORE USAGE"
                    SAVEINDX        = 5#, % CODE FOR "SAVE CORE USAGE"
                    INFOSIZE        = 5#; % NUMBER OF ENTRIES FOR EACH MIX

                    DEFINE INFO[INFO1,INFO2] = JOBINFO[INFO1*INFOSIZE+INFO2-1]#;

                    LABEL START, LOOP, FINISHED;

                    COMMENT
                    THE "INSTRUCTIONS" ARE STORED IN THE GLOBAL VARIABLE
                    "WKSETINSTRUCT", USING FIELDS FOUR BITS IN LENGTH.
                    THE FIRST "INSTRUCTION" WILL BE IN THE [44:4] FIELD, THE
                    SECOND "INSTRUCTION" WILL BE IN THE [40:4] FIELD, AN SO FORTH.
                    THESE "INSTRUCTIONS" ARE THE NUMERICAL VALUES CORRESPONDING TO
                    CODES DEFINED ABOVE.

                    AS AN EXAMPLE OF HOW THESE "INSTRUCTIONS" ARE USED, SUPPOSE THAT
                    WKSETINSTRUCT.[44:4] CONTAINED A VALUE OF 3,
                    WKSETINSTRUCT.[40:4] CONTAINED A VALUE OF 2, AND THE
                    REMAINDER OF THE WKSETINSTRUCT WORD WERE ZERO. IN THIS
                    INSTANCE, THIS ROUTINE WOULD FIRST EXAMINE ALL JOBS IN THE
                    MIX, FINDING THE JOB WHICH HAD BEEN RUNNING FOR THE LONGEST
                    PERIOD OF TIME. NEXT, ALL JOBS WHICH HAVE BEEN RUNNING FOR A
                    PERIOD OF TIME WHICH IS WITHIN THE "WKSETOLERANCE" (NORMALLY
                    WITHIN ABOUT 10% OF THE MAXIMUM VALUE FOUND ABOVE) ARE EXAMINED
                    FOR THE NEXT "INSTRUCTION", THAT IS, THE PRIORITY.
                    IN THIS MANNER, THE JOB WHICH HAS BEEN RUNNING FOR THE LONGEST
                    PERIOD OF TIME, AND WHICH HAS THE HIGHEST PRIORITY WILL BE
                    SELECTED FOR "STOPPING".
                    END OF COMMENT;


                    SUBROUTINE CORESEARCH;
                       BEGIN
                       MAXMIX := 0;
                       % SEARCH THE LINKS TO DETERMINE CORE USAGE
                       IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);
                       LOC := 0; % START AT LOW END OF MEMORY
                       TOTALSYSTEMCORE := TOTALOLAYCORE := TOTALSAVECORE := 0;
                       WHILE (SIZE:=(LINK:=M[LOC]).[CF] -LOC) GEQ 0 DO
                          BEGIN
                          TOTALSYSTEMCORE := TOTALSYSTEMCORE + SIZE;
                          IF NOT LINK.[1:1] THEN % IN-USE AREA
                             BEGIN
                             IF (MIX:=LINK.[9:6]) GTR MAXMIX THEN MAXMIX := MIX;
                             IF LINK.[2:1] THEN % SAVE AREA
                                BEGIN
                                TOTALSAVECORE := TOTALSAVECORE + SIZE;
                                INFO[MIX,SAVEINDX] := INFO[MIX,SAVEINDX] - SIZE;
                                % NOTE: JOBS SHOULD BE STOPPED IN INVERSE RELATION TO
                                %       AMOUNT OF SAVE CORE USED
```

```
12365500 T  0000:0
12366000 T  0000:0
12366500 T  0000:0
12367000 T  0000:0
12367500 T  0000:0
12368000 T  0000:0
12368500 T  0000:0
12369000 T  0000:0
12369500 T  0000:0
12370000 T  0000:0
12370500 T  0000:0
12371000 T  0000:0
12371500 T  0000:0
12372000 T  0000:0
12372500 T  0000:0
12373000 T  0000:0
12373500 T  0000:0
12374000 T  0000:0
12374500 T  0000:0
12375000 T  0000:0
12375500 T  0000:0
12376000 T  0000:0
12376500 T  0000:0
12377000 T  0000:0
12377500 T  0000:0
12378000 T  0000:0
12378500 T  0000:0
12379000 T  0000:0
12379500 T  0000:0
12380000 T  0000:0
12380500 T  0000:0
12381000 T  0000:0
12381500 T  0000:0
12382000 T  0000:0
12382500 T  0000:0
12383000 T  0000:0
12383500 T  0000:0
12384000 T  0000:0
12384500 T  0001:0
12385000 T  0001:0
12385500 T  0001:3
12386000 T  0001:3
12386500 T  0004:3
12387000 T  0005:2
12387500 T  0007:1
12388000 T  0011:1
12388500 T  0011:1
12389000 T  0012:2
12389500 T  0013:2
12390000 T  0014:0
12390500 T  0017:0
12391000 T  0017:3
12391500 T  0018:1
12392000 T  0019:2
12392500 T  0024:2
12393000 T  0024:2
```

```
                 END                                                              T  0024:2
                                                                                     12391000
              ELSE                                                                T  0024:2
                 BEGIN                                                            T  0024:2
                 TOTALOLAYCORE := TOTALOLAYCORE + SIZE;                           T  0025:0
                 INFO[MIX,COREINDX] := INFO[MIX,COREINDX] + SIZE;                 T  0026:1
                 END;                                                             T  0031:1
                                                                                     12394500
              END; % IF IN-USE AREA                                               T  0031:1
                                                                                     12389500
           LOC := LINK.[CF]; % NEXT LINK                                          T  0031:1
           END; % WHILE STATEMENT                                                 T  0032:2
                                                                                     12388000
        FOR MIX := 1 STEP 1 UNTIL MAXMIX DO                                       T  0033:0
           IF RUNNING[MIX] THEN                                                   T  0034:0
              IF PRYOR[MIX] LSS 0 THEN % CHECK AGAIN (LOSS OF CNTRL.ABOVE)        T  0034:2
                 BEGIN                                                            T  0036:0
                 RUNNING[MIX] := 0;                                               T  0036:2
                 NJOBS := NJOBS - 1;                                              T  0037:3
                 END;                                                             T  0039:0
                                                                                     12399500
        % DONT USE JOBS WHICH ARE TERMINATING OR JUST STARTING                     T  0041:1
        IF NJOBS LSS 2 THEN GO TO FINISHED;                                       T  0041:1
        END SUBROUTINE CORESEARCH;                                                T  0042:2
                                                                                     12384500
                                                                                  T  0042:3
     IF (CLOCK+P(RTR)-WKSETSWITCHTIME) LSS 960 THEN                               T  0042:3
        BEGIN                                                                     T  0051:1
        % ALLOW 15 SECONDS AFTER THE LAST "BOJ" OR "EOJ"                          T  0051:3
        % BEFORE TESTING THE OVERLAY RATE                                         T  0051:3
        WKSETCLOCK:=(*P(DUP)) + 960;                                              T  0051:3
        GO TO FINISHED;                                                           T  0053:3
        END;                                                                      T  0054:1
                                                                                     12404000
     RUNNING := [M[T1:=SPACE(MIXMAX+1)]] &                                        T  0054:1
                 (MIXMAX+1)[8:38:10];                                             T  0057:2
     JOBINFO := [M[T2:=SPACE((MIXMAX+1)xINFOSIZE)]] &                             T  0059:2
                 ((MIXMAX+1)xINFOSIZE)[8:38:10];                                  T  0063:1
                                                                                  T  0065:3
  START:                                                                          T  0065:3
                                                                                  T  0065:3
     STREAM(F1:=T1-1,SZ1:=MIXMAX+1,F2:=T2-1,                                      T  0065:3
           SZ2 := (MIXMAX+1)xINFOSIZE, T1,T2);                                    T  0068:1
        BEGIN % ZERO OUT THE ARRAYS                                               T  0070:1
        SI:=F2; DS:=SZ2 WDS; SI:=F1; DI:=T1; DS:=SZ1 WDS;                         T  0070:1
        END;                                                                      T  0072:0
                                                                                     12411500
     NJOBS := TOTALPTIME := TOTALOLAY := MAXOLAY := 0;                            T  0072:1
     FOR MIX:=1 STEP 1 UNTIL MIXMAX DO                                            T  0074:2
       IF JARROW[MIX] NEQ 0 THEN % RUNNING JOB                                    T  0076:0
         IF NOT(JAR[MIX,9].[3:1]) THEN % NOT ALREADY STOPPED                      T  0077:0
           IF (PRYOR[MIX] GEQ 0) AND (REPLY[MIX]=0) THEN                          T  0079:1
              BEGIN                                                               T  0082:0
              IF NOT(JAR[MIX,9].SYSJOBF) THEN %NOT "SYSTEM JOB                    T  0082:2
                 BEGIN                                                            T  0084:1
                 RUNNING[MIX] := 1;                                               T  0084:3
                 NJOBS := NJOBS + 1; % COUNT THE NUMBER OF JOBS                   T  0086:0
```

```
                END;                                                                    12418000 T  0087:1
                                                                                                    12416500
              INFO[MIX,ETIME]NDX]:=                                                     12418500 T  0087:1
                NABS(CLOCK+P(RTR)-NFO[(MIX-1)×NDX+2],[1:17]×60);                        12419000 T  0089:1
              PTIME := JAR[MIX,3] + PROCTIME[MIX];                                      12419500 T  0094:0
$ SET OMIT = NEWLOGGING OR OMIT                                                         12419599 T  0096:1
              IF (P1MIX=MIX OR P2MIX=MIX) THEN                                          12419600 T  0096:1
$ POP OMIT                                                                              12419601 T  0098:0
$ SET OMIT = NOT(NEWLOGGING) OR OMIT                                                    12419699 T  0098:0
              PTIME := PTIME+CLOCK+P(RTR);                                              12420000 T  0098:0
              IF (INFO[MIX,OLAY]NDX]:=                                                  12420500 T  0100:1
                  OLAYTIME[MIX]/PTIME) GTR MAXOLAY THEN                                 12421000 T  0102:1
                     IF RUNNING[MIX] THEN                                               12421500 T  0104:1
                        MAXOLAY:=INFO[MIX,OLAYINDX]; % FIND MAX.VALUE                   12422000 T  0105:1
              INFO[MIX,PRIOR]NDX] := PRYOR[MIX].[CF];                                   12422500 T  0108:1
              TOTALOLAY := TOTALOLAY + OLAYTIME[MIX];                                   12423000 T  0111:3
              TOTALPTIME:= TOTALPTIME + PTIME;                                          12423500 T  0113:1
              END; % MIX LOOP;                                                          12424000 T  0114:2
                                                                                                    12415500
                                                                                        12424500 T  0116:3
 MIX←WKSETNOSELECT;                                                          %525-      12424700 C  0116:3
  WKSETNOSELECT:=((OLAY:=TOTALOLAY/TOTALPTIME) GEQ (WKSETMAXOLAY×.85));                 12425000 T  0118:1
 IF MIX AND NOT WKSETNOSELECT THEN SELECTION; % SEE IF ANYTHING CAN GO                  12425200 C  0121:3
  % NOTE: WKSETNOSELECT IS A FLAG TO PROCEDURE SELECTRUN TO                            12425500 T  0126:2
  %       PREVENT ENTERING ADDITIONAL JOBS INTO THE MIX                                 12426000 T  0126:2
  IF (OLAY GTR WKSETMAXOLAY) OR (MAXOLAY GTR (WKSETMAXOLAY×4)) THEN                     12426500 T  0126:2
  % SUSPEND SOMETHING IF THE TOTAL OLAY RATE EXCEEDS MAX. VALUE                        12427000 T  0129:1
  % SPECIFIED, OR ANY INDIVIDUAL RATE EXCEEDS 4 TIMES THE MAX.                         12427500 T  0129:1
  % RATE SPECIFIED.                                                                   12428000 T  0129:1
       IF NJOBS GTR 1 THEN % MORE THAN ONE JOB IS RUNNING                               12428500 T  0129:1
        BEGIN                                                                           12429000 T  0130:2
        CORESEARCH; % SEARCH MEMORY TO DETERMINE CORE USAGE                             12429500 T  0131:0
        % NOW DETERMINE WHICH JOB TO STOP BASED ON THE PRIORITY OF                      12430000 T  0132:0
        % THE INSTRUCTIONS IN "WKSETINSTRUCT"                                          12430500 T  0132:0
        STOPMIX :=  -1;                                                                 12431000 T  0132:0
        INSTRUCT := WKSETINSTRUCT;                                                      12431500 T  0133:0
        STARTING := TRUE;                                                               12432000 T  0134:0
                                                                                        12432500 T  0134:3
LOOP:                                                                                   12433000 T  0134:3
                                                                                        12433500 T  0134:3
       IF (INS:=INSTRUCT.[44:4]) NEQ 0 THEN % MORE INSTRUCTIONS                         12434000 T  0134:3
          BEGIN                                                                         12434500 T  0136:2
          INSTRUCT := 0 & INSTRUCT[8:4:40]; % SHIFT RIGHT FOR NXT.INSTR.                12435000 T  0137:0
          MAXVALUE := (IF STARTING THEN (-33000) ELSE INFO[STOPMIX,INS]);               12435500 T  0138:3
          STARTING := FALSE;                                                            12436000 T  0142:2
          % FIRST, FIND THE MAXIMUM VALUE                                              12436500 T  0143:3
          FOR MIX:=1 STEP 1 UNTIL MAXMIX DO                                             12437000 T  0143:3
             IF RUNNING[MIX] THEN                                                       12437500 T  0147:0
                IF (VALU := INFO[MIX,INS]) GTR MAXVALUE THEN                            12438000 T  0147:2
                   BEGIN                                                                12438500 T  0151:0
                   MAXVALUE := VALU;                                                    12439000 T  0151:2
                   STOPMIX := MIX;                                                      12439500 T  0152:1
                   END;                                                                 12440000 T  0153:0
                                                                                                    12438500
          % NEXT, FIND THE VALUES WITHIN THE WORK SET TOLERANCE                          12440500 T  0155:1
                                                                                        12441000 T  0155:1
                                                                                        12441500 T  0155:1
```

```
      FOR MIX:=1 STEP 1 UNTIL MAXMIX DO                                    12442000 T  0155:1
        IF MIX NEQ STOPMIX THEN                                            12442500 T  0156:0
          IF RUNNING[MIX] THEN                                             12443000 T  0156:3
             BEGIN                                                         12443500 T  0157:3
             DEVIATION := (MAXVALUE-INFO[MIX,INS])/MAXVALUE;               12444000 T  0158:1
             IF ABS(DEVIATION) GTR WKSETOLERANCE THEN                      12444500 T  0161:3
                BEGIN                                                      12445000 T  0163:0
                RUNNING[MIX]:=0;                                           12445500 T  0163:2
                NJOBS := NJOBS -1;                                         12446000 T  0164:3
                END;                                                       12446500 T  0166:0
                                                                                       12445000
             END;                                                          12447000 T  0166:0
                                                                                       12443500
      IF NJOBS GTR 1 THEN GO TO LOOP;                                      12447500 T  0168:1
      END; % IF THERE WERE MORE INSTRUCTIONS                               12448000 T  0169:2
                                                                                       12434500
                                                                           12448500 T  0169:2
   IF STOPMIX GTR 0 THEN % SOMETHING SHOULD BE STOPPED                     12449000 T  0169:2
      BEGIN                                                                12449500 T  0170:1
      IF NOTERMSET(STOPMIX) THEN % JOB IS NOT TERMINATING                  12451000 T  0170:3
         BEGIN                                                             12451500 T  0172:1
         PRTROW[STOPMIX].[PSF]:=2; % MARK IT STOPPED                       12452000 T  0172:3
         WKSETSWITCHTIME:=CLOCK+P(RTR);                                    12452500 T  0175:1
         WKSETSTOPJOBS:=WKSETSTOPJOBS OR TWO(STOPMIX); % MARK AUTO-ST      12453000 T  0177:0
         WKSETNOSELECT:=TRUE;                                      %138-   12453100 C  0179:2
         JARR[STOPMIX,9].[3:1]:=1; % MARK IT STOPPED                       12453500 T  0182:0
         STQUE[STNEXT]:=STOPMIX;  % PUT IT IN THE STQUE                    12454000 T  0185:0
         STNEXT := (STNEXT+1).[44:4]; % CIRCULAR QUEUE, 16 ENTRIES         12454500 T  0187:0
         END; % IF WE ARE STOPPING THE JOB                                 12455000 T  0190:3
                                                                                       12451500
         END; % IF SOMETHING SHOULD BE STOPPED                             12455500 T  0190:3
                                                                                       12449500
$ SET OMIT = NOT(WORKSETMONITOR) OR OMIT                                   12456000 T  0190:3
      IF WKSETMONITOR THEN                                                 12456500 T  0190:3
         IF STOPMIX GTR 0 THEN                                             12457000 T  0191:3
         FOR STOPMIX:=1 STEP 1 UNTIL MIXMAX DO                             12457500 T  0193:0
         IF JARROW[STOPMIX] NEQ 0 THEN                                     12458000 T  0195:0
         IF PRTROW[STOPMIX] NEQ 0 THEN                                     12458500 T  0196:0
         IF INFO[STOPMIX,OLAYINDX] GTR 0 THEN                              12459000 T  0197:2
         BEGIN                                                             12459500 T  0200:2
         STREAM(                                                           12460000 T  0201:0
         V1:="MIX=",                                                       12460500 T  0201:1
         V2:=STOPMIX,                                                      12461000 T  0201:2
         V3:="RAT=",                                                       12461500 T  0201:3
         V4:=(INFO[STOPMIX,OLAYINDX]*100+0,5) DIV 1,                       12462000 T  0202:0
         V5:="PRI=",                                                       12462500 T  0205:2
         V6:=INFO[STOPMIX,PRIORINDX],                                      12463000 T  0205:3
         V7:="TIM=",                                                       12463500 T  0207:3
         V8:=(ABS(INFO[STOPMIX,ETIMEINDX])/64+ 0,5) DIV 1,                 12464000 T  0208:0
         V9:="COR=",                                                       12464500 T  0211:3
         V10:=INFO[STOPMIX,COREINDX],                                      12465000 T  0212:0
         V11:="SAV=",                                                      12465500 T  0214:0
         V12:=ABS(INFO[STOPMIX,SAVEINDX]),                                 12466000 T  0214:1
         V13 := "TOT=",                                                    12466500 T  0216:2
         V14 := (TOTALOLAY/TOTALPTIME*100+0,5) DIV 1,                      12467000 T  0216:3
         DV:=0,                                                            12467500 T  0219:0
         D:=T1:=SPACE(15));                                                12468000 T  0219:1
```

```
            BEGIN                                                                                    12468500 T  0221:3
            SI:=LOC V1; DS:=LIT" ";                                                                  12469000 T  0221:3
            7(SI:=SI+4; DS:=4CHR; DS:=5DEC);                                                         12469500 T  0222:2
            DV:=DI; DI:=DI-5; DS:=4FILL; DI:=DV; DS:=LIT" ");                                        12470000 T  0223:2
            DS:=LIT"←";                                                                              12470500 T  0225:1
            END STREAM;                                                                              12471000 T  0225:3
                                                                                                                 12468500
          SPOUT(T1);                                                                                 12471500 T  0226:0
          END;                                                                                       12472000 T  0227:1
                                                                                                                 12459500
$ POP OMIT % WORKSETMONITOR                                                                          12472500 T  0229:2
      END                                                                                  %142-     12473000 P  0229:2
                                                                                                                 12429000
    ELSE                                                                                   %142-     12473010 C  0229:2
  ELSE                                                                                     %142-     12473020 C  0229:2
    IF WKSETSTOPJOBS GTR 0 THEN                                                            %142-     12473030 C  0238:0
     IF (OLAY LSS (WKSETMAXOLAY/2)) THEN % START SOMETHING                                 %142-     12473040 C  0239:2
      BEGIN                                                                                %142-     12473050 C  0241:2
      STNEXT:=IF STNEXT=0 THEN STQUEMAX ELSE STNEXT-1;                                     %142-     12473060 C  0242:0
      STOPMIX:=STQUE[STNEXT];                                                              %142-     12473070 C  0248:0
      STQUE[STNEXT]:=0;                                                                    %142-     12473080 C  0249:3
      IF (STOPMIX GTR 0) AND (STOPMIX LEQ MIXMAX) THEN                                     %142-     12473090 C  0251:3
      IF JARROW[STOPMIX] NEQ 0 THEN                                                        %142-     12473100 C  0253:2
        BEGIN                                                                              %142-     12473110 C  0255:0
        IF STOPSET(STOPMIX) THEN % NOT YET STOPPED                                         %142-     12473120 C  0255:2
        BEGIN                                                                              %142-     12473130 C  0257:0
        PRTROW[STOPMIX],[PSF]:=0;                                                          %142-     12473140 C  0257:2
        WKSETSTOPJOBS:=WKSETSTOPJOBS AND NOT(TWO(STOPMIX));                                %142-     12473150 C  0260:0
        JAR[STOPMIX,9],[3:1]:=0;                                                           %142-     12473160 C  0262:3
        END ELSE                                                                           %142-     12473170 C  0265:3
                                                                                                                 12473130
        BEGIN                                                                              %142-     12473180 C  0265:3
        REPLY[STOPMIX]:=VOK; % WAKE IT UP                                                  %142-     12473190 C  0266:1
        STREAM(J:=JARROW[STOPMIX], STOPMIX,                                                %142-     12473200 C  0267:2
              D:=T1:=SPACE(10));                                                           %142-     12473210 C  0268:2
           BEGIN                                                                           %142-     12473220 C  0271:0
           SI:=J; DS:=9 LIT" AUTO-OK ";                                                    %142-     12473230 C  0271:0
           2(SI:=SI+1; DS:=7 CHR; DS:=LIT "/");                                            %142-     12473240 C  0272:3
           DI:=DI-1; DS:=LIT"="; SI:=LOC STOPMIX;                                          %142-     12473250 C  0274:1
           DS:=2 DEC; DS:=LIT"←"; DI:=DI-3; DS:=FILL;                                      %142-     12473260 C  0275:1
           END STREAM STATEMENT;                                                           %142-     12473270 C  0276:2
                                                                                                                 12473220
        SPOUTER(T1,PSEUDOMIX[STOPMIX],1);                                                  %525-     12473280 C  0276:3
        END;                                                                               %142-     12473290 C  0278:1
                                                                                                                 12473180
      END;                                                                                 %142-     12473300 C  0278:1
                                                                                                                 12473110
      END;                                                                                 %142-     12473310 C  0278:1
                                                                                                                 12473050
FINISHED:                                                                                            12473500 T  0278:1
                                                                                                     12474000 T  0278:1
  IF JOBINFO NEQ 0 THEN FORGETSPACE(JOBINFO INX 0);                                                  12474500 T  0278:1
  IF RUNNING NEQ 0 THEN FORGETSPACE(RUNNING INX 0);                                                  12475000 T  0281:1
  WKSETRUNNING := 0; % READY FOR NEXT CYCLE                                                          12475500 T  0284:1
  KILL([MSCW]);                                                                                      12476000 T  0286:3
  END;                                                                                               12476500 T  0287:2
                                                                                                                 12351000
```

SIZE= 0288 WORDS

```
                $ POP OMIT % WORKSET                                                                    12477000 T  0000:0
                REAL PROCEDURE PRNPBTSPECASE1(Z);                                                       12500000 T  0000:0
PRT(620) = PRNPBTSPECASE1                                                    START OF REL SEGMENT; DISK ADDRESS = 00363
                %                                                                                       12500100 T  0000:0
                %   THIS PROCEDURE HANDLES THE FOLLOWING FUNCTIONS FOR COM19, DEPENDING                 12500110 T  0000:0
                %   ON THE VALUE OF Z:                                                                  12500120 T  0000:0
                %   0    FINDS THE NEXT REEL OF TAPE.                                                   12500130 T  0000:0
                %   1    FINDS THE NEXT REEL OF A BACK-UP DISK FILE.                                    12500140 T  0000:0
                %   2    HANDLES THE QT + OR - MESSAGE.                                                 12500150 T  0000:0
                %   3    INITAILIZES A NEW FILE (OR PACKET).                                            12500160 T  0000:0
                %   4    HANDLES TERMINATION OF A FILE.                                                 12500170 T  0000:0
                %                                                                                       12500180 T  0000:0
                VALUE Z;  REAL Z;                                                                       12500500 T  0000:0
                BEGIN                                                                                   12501000 T  0000:0
                    REAL    RCW=+0, MSCW=-2, COMMON=-4;                                                 12501500 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
STACK(F-4) = COMMON
                    ARRAY   INREC=+1[*];                                                                12502000 T  0000:0
STACK(F+1) = INREC
                    ARRAY   FPB=INREC+1[*], LOGINFO=FPB+1[*], HEADER=LOGINFO+1[*];                      12502500 T  0000:0
STACK(F+2) = FPB
STACK(F+3) = LOGINFO
STACK(F+4) = HEADER
                    REAL    UNIT=HEADER+1, V=UNIT+1, COPY=V+1, MFID=COPY+1, FID=MFID+1,                 12503000 T  0000:0
STACK(F+5) = UNIT
STACK(F+6) = V
STACK(F+7) = COPY
STACK(F+10) = MFID
STACK(F+11) = FID
                        IOD=FID+1, T=IOD+1, B=T+1;                                                      12503500 T  0000:0
STACK(F+12) = IOD
STACK(F+13) = T
STACK(F+14) = B
                    REAL    SEARCHVAL=B+1, CURROW=SEARCHVAL+1, FIRSTFID=CURROW+1,                       12504000 T  0000:0
STACK(F+15) = SEARCHVAL
STACK(F+16) = CURROW
STACK(F+17) = FIRSTFID
                        SEGNR=FIRSTFID+1;                                                               12504500 T  0000:0
STACK(F+20) = SEGNR
                    REAL    X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;                                     12505000 T  0000:0
STACK(F+15) = X
STACK(F+16) = NUM
STACK(F+20) = RECOUNT
                    BOOLEAN SIGNEDON=SEGNR+1, FORMTOG=SIGNEDON+1, ABORTED=FORMTOG+1;                    12505500 T  0000:0
STACK(F+21) = SIGNEDON
STACK(F+22) = FORMTOG
STACK(F+23) = ABORTED
                    BOOLEAN TERMFLAG=LOGINFO, NOCONT=FIRSTFID;                                          12506000 T  0000:0
STACK(F+3) = TERMFLAG
STACK(F+17) = NOCONT
                    $ SET OMIT = NOT PACKETS                                                            12506500 T  0000:0
                    BOOLEAN STOG=ABORTED+1;                                                             12507000 T  0000:0
STACK(F+24) = STOG
                    REAL    PCOPY=STOG+1, PFIRSTFID=PCOPY+1;                                            12507500 T  0000:0
STACK(F+25) = PCOPY
```

```
STACK(F+26) = FIRSTFID
                $SET OMIT = NOT (RJE AND PACKETS)                                                    12508000 T  0000:0
                $ SET OMIT = PACKETS                                                                 12509500 T  0000:0
                                                                                                     12512000 T  0000:0
                   LABEL   RD, RED, SPACEND, NOMORE, NOFILE, AUT, BOMBER, NEXTFILE,                  12512500 T  0000:0
                           PNCHLK, PRINTITAGAIN, EOF, PRNTDS, PNCHDS, TAPEND, CONTINUE,              12513000 T  0000:0
                           RETURNFALSE, REMOVEM, TEST, TAPECL, STOPTIME, RETURNTRUE,                 12513500 T  0000:0
                           RETURNTOCOM19;                                                            12513750 T  0000:0
                   LABEL   LOOK4TAPE, NOMOREELS, QTSPEC, INITIALIZE, STARTANEWFILE;                  12514000 T  0000:0
                   SWITCH  SW :=                                                                     12514500 T  0000:0
                           LOOK4TAPE, NOMOREELS, QTSPEC, INITIALIZE, STARTANEWFILE;                  12515000 T  0000:0
                   DEFINE  DSED        = TERMSET(P1MIX)#,                                            12515500 T  0000:0
                           QTED        = (PRT[P1MIX,@25]#0)#,                                        12516000 T  0000:0
                           VF          = 43:5#,                                                      12516100 T  0000:0
                           UNITF       = 38:5#,                                                      12516150 T  0000:0
                           COPYF       = 30:8#,                                                      12516200 T  0000:0
                           NUMF        = 22:8#,                                                      12516250 T  0000:0
                           NOTP        = 29:1#,                                                      12516300 T  0000:0
                           COPYO       = 21:1#,                                                      12516350 T  0000:0
                $ SET OMIT = PACKETS                                                                 12516500 T  0000:0
                           REELNO      = 42:6#,                                                      12518000 T  0000:0
                $ POP OMIT OMIT                                                                      12518500 T  0000:0
                $ SET OMIT = RJE                                                                     12518600 T  0000:0
                           STA         = 0#,                                                         12518700 T  0000:0
                $ POP OMIT                                                                           12518800 T  0000:0
                           SEPARATION  = 46#;    % FOR 6 LPI, SET IT TO 70 FOR 8 LPI.               12519000 T  0000:0
              %*************************************************************************           12519500 T  0000:0
                                                                                                     12520000 T  0000:0
                   SUBROUTINE RDYTAPE;                                                               12520500 T  0000:0
                   BEGIN                                                                             12521000 T  0001:0
                        B.[18:9]:=@54;                                                               12521500 T  0001:0
                        P(WAITIO(@4200000000,0,UNIT),DEL);                                           12522000 T  0002:3
                        P(WAITIO(B,0,UNIT),WAITIO(B,@40,UNIT),DEL,DEL);                              12522500 T  0004:1
                        RECOUNT:=@77777;                                                             12523000 T  0007:1
                   END;                                                                              12523500 T  0008:0
                                                                                                                  12521000
                                                                                                     12524000 T  0011:0
              %*************************************************************************           12524500 T  0011:0
                                                                                                     12525000 T  0011:0
                   SUBROUTINE REWIND;                                                                12525500 T  0011:0
                   BEGIN                                                                             12526000 T  0011:0
                        STOPTIMING(0,1023);                                                          12526500 T  0011:0
                        P(WAITIO(@4200000000,0,UNIT),DEL);                                           12527000 T  0012:0
                        IF (SAVEWORD AND TWO(UNIT))=0 AND PRNTABLE[UNIT].[1:1]                       12527500 T  0013:2
                          AND NOT (SVPBT OR QTED OR NOCONT) THEN                                     12528000 T  0015:2
                             BEGIN RDCTABLE[UNIT].[8:6]←0;                          %539-            12528400 C  0020:0
                             INDEPENDENTRUNNER(P(,PURGEIT),UNIT,64)                                  12528500 T  0023:0
                             END                                                    %539-            12528600 C  0024:0
                                                                                                                  12528400
                        ELSE                                                                         12529000 T  0024:1
                        BEGIN LABELTABLE[UNIT]←@114;                                                 12529500 T  0024:1
                             MULTITABLE[UNIT]←RDCTABLE[UNIT]←0;                                      12530000 T  0027:1
                             SLEEP((TOGLE),STATUSMASK);                                              12530500 T  0029:2
                             READY←READY AND NOT NT1←TWO(UNIT);                                      12531000 T  0031:0
                             RRRMECH←NOT NT1 AND RRRMECH OR NT1 AND SAVEWORD;                        12531500 T  0033:2
                        END;                                                                         12532000 T  0036:0
                                                                                                                  12529500
```

```
    END;                                                                                    12532500 T  0036:0
                                                                                                    12526000
                                                                                            12533000 T  0036:1
%***************************************************************************              12533500 T  0036:1
                                                                                            12534000 T  0036:1
    BOOLEAN SUBROUTINE LOOKFORTAPE;                                                         12534500 T  0036:1
    BEGIN                                                                                   12535000 T  0037:0
        T:=RDCTABLE[UNIT];                                                                  12535500 T  0037:0
        REWIND;                                                                             12536000 T  0038:0
        IF SIGNEDON THEN FPB[4]:=FPB[4]-LOGINFO[24]-CLOCK-P(RTR);                           12536500 T  0039:0
        IF P(T:=FINDINPUT(MFID,@122212342546447,T.[14:10]+1,T.[24:17],                      12537000 T  0043:0
            -0,0,T:=0,0,0,0)) GEQ 0, DUP) THEN                                              12537500 T  0045:0
        BEGIN                                                                               12538000 T  0049:2
            RDCTABLE[UNIT:=T].[8:6]:=P1MIX;                                                 12538500 T  0050:0
            LABELTABLE[UNIT]:=FID;                                                          12539000 T  0053:0
            FPB:=PRT[P1MIX,3];        % FINDINPUT CALLS STARTIMING                        12539500 T  0054:1
            IF SIGNEDON THEN FPB[4]:=FPB[4]+LOGINFO[24]+CLOCK+P(RTR);                       12540000 T  0055:3
            RDYTAPE;                                                                        12540500 T  0059:3
        END;                                                                                12541000 T  0061:0
                                                                                                    12538000
        LOOKFORTAPE:=P;                                                                     12541500 T  0061:0
    END;                                                                                    12542000 T  0061:1
                                                                                                    12535000
                                                                                            12542500 T  0063:0
%***************************************************************************              12543000 T  0063:0
                                                                                            12543500 T  0063:0
    REAL SUBROUTINE READTAPE;                                                               12544000 T  0063:0
    BEGIN                                                                                   12544500 T  0063:0
RD:     IF DSED OR PRT[P1MIX,@25]=5 THEN BEGIN P(5); GO TO RED END;                         12545000 T  0063:0
                                                                                                    12545000
        IF WAITIO(B,@2000040,UNIT).[42:1] THEN                                              12545500 T  0067:2
        BEGIN                                                                               12546000 T  0069:1
            P(WAITIO(B,@2000040,UNIT),DEL);                                                 12546500 T  0069:3
            IF M[B INX 3] THEN                                                              12547000 T  0071:1
              IF LOOKFORTAPE THEN GO TO RD;                                                 12547500 T  0072:3
            P(3);                                                                           12548000 T  0074:3
            GO TO RED;                                                                      12548500 T  0075:0
        END;                                                                                12549000 T  0077:0
                                                                                                    12546000
        FOR T:=17 STEP 18 UNTIL 89 DO                                                       12549500 T  0077:0
          IF M[B INX T].[20:1] THEN T:=256;                                                 12550000 T  0078:0
        P(T>200);                                                                           12550500 T  0083:2
RED:    READTAPE:=P;                                                                        12551000 T  0084:1
    END;                                                                                    12551500 T  0084:2
                                                                                                    12544500
                                                                                            12552000 T  0084:3
%***************************************************************************              12552500 T  0084:3
                                                                                            12553000 T  0084:3
    BOOLEAN SUBROUTINE SPACETOFILE;                                                         12553500 T  0084:3
    BEGIN                                                                                   12554000 T  0085:0
        X:=NUM;                                                                             12554500 T  0085:0
        WHILE (X:=X-1) GEQ 0 DO                                                             12555000 T  0085:3
        BEGIN                                                                               12555500 T  0088:0
            DO UNTIL (T:=READTAPE);                                                         12556000 T  0088:0
            IF T GEQ 3 THEN BEGIN P(1); GO TO SPACEND END;                                  12556500 T  0090:0
                                                                                                    12556500
        END;                                                                                12557000 T  0092:0
```

```
        P(0);
SPACEND:
        SPACETOFILE:=P;
    END;


%*************************************************************************

    BOOLEAN SUBROUTINE FINDFILE;
    BEGIN
        IF HEADER.[CF] GEQ 64 THEN FORGETSPACE(HEADER);              %159-
        IF (HEADER:=DIRECTORYSEARCH(MFID,-FID,SEARCHVAL)) LSS 64 THEN
          GO TO NOMORE;
        HEADER:=[M[HEADER]]&30[8:38:10];
        SEGNR:=0;
        CURROW:=10;
        IF ABORTED:=HEADER[5].[2:1] THEN
          IF HEADER[7]=0 THEN
          BEGIN
NOMORE:         P(1);
                GO TO NOFILE;
          END;

        LABELTABLE[V]:=NABS(FID);
        P(0);
NOFILE: FINDFILE:=P;
    END;


%*************************************************************************

    BOOLEAN SUBROUTINE NOMOREREELS;
    BEGIN
        IF FID.[REELNO]=0 THEN
            P(1)                                                     %159-
        ELSE                                                         %159-
        BEGIN
            STREAM(ONE:=1, F:=[FID]);
            BEGIN SI:=LOC ONE; DS:=8 ADD END;

            P(FINDFILE);
        END;

        NOMOREREELS:=P;
    END;

 $ SET OMIT = NOT PACKETS

%*************************************************************************

    BOOLEAN SUBROUTINE NOMOREFILES;
    BEGIN
        IF NOT P(FID.[30:12]="99" OR COMMON.[NOTP],DUP) THEN
        BEGIN
            P(DEL);
            STREAM(ONE:=1, F:=[FID]);
```

```
                                                        12555500
12557500 T  0092:2
12558000 T  0092:3
12558500 T  0092:3
12559000 T  0093:0
                                                        12554000
12559500 T  0093:1
12560000 T  0093:1
12560500 T  0093:1
12561000 T  0093:1
12561500 T  0094:0
12561600 C  0094:0
12562000 T  0097:0
12562500 T  0099:2
12563000 T  0100:0
12563500 T  0102:2
12564000 T  0103:1
12564500 T  0104:0
12565000 T  0105:2
12565500 T  0107:0
12566000 T  0107:2
12566500 T  0107:3
12567000 T  0108:1
                                                        12565500
12567500 T  0108:1
12568000 T  0109:3
12568500 T  0110:0
12569000 T  0110:1
                                                        12561500
12569500 T  0110:2
12570000 T  0110:2
12570500 T  0110:2
12571000 T  0110:2
12571500 T  0111:0
12572500 T  0111:0
12573500 P  0112:1
12574000 P  0113:0
12574500 T  0113:0
12575000 T  0113:2
12575500 T  0114:2
                                                        12575500
12576000 T  0115:1
12576500 T  0116:0
                                                        12574500
12577000 T  0116:0
12577500 T  0116:1
                                                        12571500
12578000 T  0116:2
12578500 T  0116:2
12579000 T  0116:2
12579500 T  0116:2
12580000 T  0116:2
12580500 T  0117:0
12581000 T  0117:0
12581500 T  0119:3
12582000 T  0120:1
12582500 T  0120:2
```

```
                BEGIN SI:=LOC ONE; SI:=SI+6; DI:=DI+5;                                  12583000 T  0121:2
                      DS:=2 ADD; DS:=LIT"1";                                            12583500 T  0122:1
                END;                                                                    12584000 T  0123:0
                                                                                                    12583000
                FIRSTFID:=FID;                                                          12584500 T  0123:1
                P(FINDFILE);                                                            12585000 T  0124:0
           END;                                                                         12585500 T  0125:0
                                                                                                    12581500
           NOMOREFILES:=P;                                                              12586000 T  0125:0
      END;                                                                              12586500 T  0125:1
                                                                                                    12580500
 $ POP OMIT                                                                             12587000 T  0125:2
                                                                                        12587500 T  0125:2
%*************************************************************************            12588000 T  0125:2
                                                                                        12588500 T  0125:2
      SUBROUTINE REMOVEIT;                                                              12589000 T  0125:2
      BEGIN                                                                             12589500 T  0126:0
           T:=DIRECTORYSEARCH(-MFID,-(FID:=PFIRSTFID),SEARCHVAL);                       12590000 T  0126:0
           IF T GEQ 64 THEN                                                             12590500 T  0128:3
 $ SET OMIT = NOT PACKETS                                                               12591000 T  0129:2
           DO BEGIN                                                                     12591500 T  0129:2
 $ POP OMIT                                                                             12592000 T  0130:0
             DO IF FID=IOD THEN GO AUT UNTIL NOMOREREELS;                               12592500 T  0130:0
 $ SET OMIT = NOT PACKETS                                                               12593000 T  0132:2
           END UNTIL NOMOREFILES;                                                       12593500 T  0132:2
                                                                                                    12591500
 $ POP OMIT                                                                             12594000 T  0134:2
 $ POP OMIT                                                                             12594500 T  0134:2
AUT:                                                                                    12595000 T  0134:2
      END;                                                                                          12589500
                                                                                        12595500 T  0134:3
%*************************************************************************            12596000 T  0134:3
                                                                                        12596500 T  0134:3
      SUBROUTINE PAGEJECT;                                                              12597000 T  0134:3
      BEGIN                                                                             12597500 T  0135:0
 $ SET OMIT = NOT RJE                                                                   12598000 T  0135:0
           P(WAITIO(@4000100000,0,V), DEL);                                             12600500 T  0135:0
      END;                                                                              12601000 T  0136:2
                                                                                                    12597500
                                                                                        12601500 T  0138:0
%*************************************************************************            12602000 T  0138:0
                                                                                        12602500 T  0138:0
      SUBROUTINE WRITEB;                                                                12603000 T  0138:0
      BEGIN                                                                             12603500 T  0138:0
 $ SET OMIT = NOT RJE                                                                   12604000 T  0138:0
           P(WAITIO(B INX @210104000000,0,V), DEL);                                     12607000 T  0138:0
      END;                                                                              12607500 T  0140:0
                                                                                                    12603500
                                                                                        12608000 T  0142:0
%*************************************************************************            12608500 T  0142:0
                                                                                        12609000 T  0142:0
      SUBROUTINE IDLETIMER;                                                             12609500 T  0142:0
      BEGIN                                                                             12610000 T  0142:0
           STOPLOG(P1MIX,1);                                                            12610100 T  0142:0
           P(P1MIX); P1MIX:=0;                                                          12610500 T  0144:2
           IDLETIME;                                                                    12611000 T  0145:2
           P1MIX:=P;                                                                    12611500 T  0146:0
```

```
 $ SET OMIT = NOT(NEWLOGGING)
       STARTLOG(P1MIX);
    END IDLETIMER;


%*************************************************************************

    SUBROUTINE SETUPINREC;
    BEGIN
         INREC:=[MYB INX (UNIT=18)]]&18[8:38:10];
         INREC[17]:=0;
    END;


%*************************************************************************

    SUBROUTINE INVALIDNUM;
    BEGIN
         FILEMESS("INVALID","FILE    ",0,"NUMB  #",NUM+1,0,0);
    END;


%*************************************************************************

    P(DEL,Z,MSCW,STF);
    GO TO SWYP;    % LOOK4TAPE,NOMOREELS,QTSPEC,INITIALIZE,STARTANEWFILE
%
%   LOOKFORTAPE FINDS THE NEXT REEL. THE FIRST RECORD IS A LABEL SO
%   INREC IS MOVED DOWN TO SKIP IT.

LOOK4TAPE:

    P(LOOKFORTAPE);
    IF M[B+89],[1:11]=0 THEN % LABEL RECORD
    BEGIN
         INREC←(NOT 17) INX INREC;
         RECOUNT←0;
    END;

    GO RETURNTOCOM19;

NOMOREELS:

    P(NOMOREREELS);
    GO RETURNTOCOM19;

QTSPEC:

    PRT[P1MIX,@25]:=0;
    P(T);                              % BE CAREFUL OF THIS.
    IF UNIT=18 THEN                    % DISK PORTION
    BEGIN NT2:=(T,[9:24] DIV 5)&T[1:2:1];
         IOD:=(HEADER[6] DIV 3)×3;          % CALCULATE TRUE ROW SIZE
         IF (T:=3×NT2+SEGNR) LSS 0 THEN     % SPACE BACKWARD
         DO IF (CURROW:=CURROW-1) LSS 10 THEN    % TO A PREVIOUS FILE.
         BEGIN
              IF FID=FIRSTFID THEN GO TO BOMBER;
```

```
12611899 T  0146:2
12612000 T  0146:2
12612500 T  0149:0
                    12610000
12613000 T  0149:1
12613500 T  0149:1
12614000 T  0149:1
12614500 T  0149:1
12615000 T  0150:0
12615500 T  0150:0
12616000 T  0153:1
12616500 T  0154:2
                    12615000
12617000 T  0154:3
12617500 T  0154:3
12618000 T  0154:3
12618500 T  0154:3
12618750 T  0155:0
12619000 T  0155:0
12619250 T  0158:0
                    12618750
12619500 T  0162:0
12620000 T  0162:0
12620500 T  0162:0
12621000 T  0162:0
12621500 P  0163:2
12621900 T  0166:3
12621910 T  0166:3
12621920 T  0166:3
12621930 T  0166:3
12622000 T  0166:3
12622100 T  0166:3
12622500 T  0166:3
12623000 T  0168:0
12623100 T  0170:2
12623200 T  0171:0
12623300 T  0172:3
12623400 T  0173:2
                    12623100
12624000 T  0173:2
12624400 T  0174:0
12624500 T  0174:0
12624600 T  0174:0
12625000 T  0174:0
12625500 T  0175:0
12625900 T  0175:2
12626000 T  0175:2
12626100 T  0175:2
12626250 T  0175:2
12626500 T  0177:1
12626750 T  0177:2
12627000 T  0178:1
12627500 T  0181:2
12628000 T  0183:2
12628500 T  0185:3
12629000 T  0188:0
12629500 T  0188:2
```

```
                IF SEARCHVAL=3 THEN P(DIRECTORYSEARCH(=MFID,FID,13),DEL);          12630000 T  0189:3
                FORGETSPACE(HEADER);                                               12630500 T  0192:3
                STREAM(ONE:=1, F:=[FID]);                                          12631000 T  0193:3
                BEGIN SI:=LOC ONE; DS:=8 SUB END;                                  12631500 T  0194:3
                                                                                                12631500
                IF (HEADER:=DIRECTORYSEARCH(MFID,FID,5)) LSS 64                    12632000 T  0195:2
                  THEN GO BOMBER;                                                  12632002 T  0197:1
                HEADER:=M[HEADER]&30[8:38:10];                                     12632500 T  0198:1
                CURROW:=HEADER[9].[43:5]+9;                                        12633000 T  0200:3
                WHILE HEADER[CURROW]=0 DO CURROW:=CURROW-1;                        12633500 T  0202:3
                IF CURROW<10 THEN                                                  12634000 T  0206:0
                BEGIN                                                              12634500 T  0206:3
BOMBER:              NT1:="RANGE +";                                               12635000 T  0207:1
                     IF (NT2:=P).[2:1] THEN          % LEFT AT 12626500%168-        12635500 P  0208:0
                     NT1:=NT1&"-"[42:42:6];                                        12636000 T  0209:0
                     FILEMESS("INVALID","QT     ",0,                               12636500 T  0211:1
                              NT1,NT2,[9:24],0,0);                                 12637000 T  0211:1
                     PRT[PIMIX,@25]:=5;              % FORCE A QT                  12637500 T  0214:1
                     GO RETURNFALSE;                                               12638500 T  0216:0
                END;                                                               12639000 T  0220:0
                                                                                                12634500
           END UNTIL (T:=IOD+T) GEQ 0                                              12639500 T  0220:0
                                                                                                12629000
           ELSE                                  % SPACE DISK FORWARD              12640000 T  0221:1
           BEGIN                                                                   12640500 T  0222:1
                IF T GEQ IOD THEN                % TO ANOTHER ROW,                 12641000 T  0222:3
                DO                               % CHECKING FOR NEW FILE           12641500 T  0223:2
                  IF (CURROW:=CURROW+1) GEQ (HEADER[9].[43:5]+10) THEN             12642000 T  0224:0
NEXTFILE:            IF NOMOREREELS THEN GO TO BOMBER                              12642500 T  0227:0
                UNTIL (T:=T-IOD) LSS IOD;                                          12643000 T  0229:0
                IF (CURROW-10)×10D+T GTR HEADER[7]×3 THEN                          12643500 T  0232:0
                  GO TO NEXTFILE;                                                  12644000 T  0235:0
           END;                                                                    12644500 T  0235:2
                                                                                                12640500
           SEGNR:=T;                                                               12645000 T  0235:2
           P(19);                                                                  12645500 T  0236:1
      END ELSE                                 % TAPE PORTION                     12646000 T  0236:2
                                                                                                12627000
      BEGIN                                                                        12646500 T  0236:2
           IF T.[2:1] THEN                     % SPACE BACKWARD                   12647000 T  0237:0
             IF (T:=T.[9:24]) LSS INREC[17].[CF] THEN                              12647500 T  0237:3
             BEGIN IOD:=(T+4) DIV 5;                                               12648000 T  0240:3
                  DO P(WAITIO((89 INX B)&7[22:45:3],0,UNIT),DEL)                   12648500 T  0243:0
                    UNTIL (IOD:=IOD-1) LEQ 0 OR DSED OR QTED;                      12649000 T  0246:0
                  RECOUNT:=5;                                                      12649500 T  0251:3
             END ELSE GO TO BOMBER             % REEL SWITCH NOT ALLOWED         12650000 T  0252:2
                                                                                                12648000
           ELSE                                                                    12650250 T  0252:2
           BEGIN IF (IOD:=T.[9:24] DIV 5) # 0 THEN % SPACE FORWARD    %168-        12650500 P  0252:2
                DO UNTIL (X:=READTAPE) OR (IOD:=IOD-1)=0;                          12651000 T  0255:1
                IF IOD#0 THEN                                                      12651500 T  0260:0
                  IF X#5 THEN GO TO BOMBER;    % 5=DS-ED, LET IT FALL THRU.      12652000 T  0260:3
                RECOUNT:=0;                                                        12652500 T  0262:2
           END;                                                                    12653000 T  0263:1
                                                                                                12650500
           RECOUNT:=(M[B INX 17] INX NOT RECOUNT).[CF];                            12653500 T  0263:1
           P(18);                                                                  12654000 T  0266:2
```

```
    END;                                                                    12654500 T  026:3
                                                                                        12646500
%                                                                           12654900 T  026:3
%   FIX UP INREC, BUILD IO DESC AND QT MESSAGE AS NEXT TO BE WRITTTEN.      12654910 T  026:3
%                                                                           12654920 T  026:3
    P(T:=B INX P(XCH));                                                     12655000 T  026:3
    INREC:=INREC&P(XCH)[CTC];                                               12655500 T  026:0
    M[T-1]:=(RECOUNT+1)R74[11:41:7]R(V#22)[29:44:4];                        12656000 T  026:2
    NT1:=P;                                    % LEFT AT 12626500          12656500 T  027:2
    STREAM(A:=NT1.[9:24], C:=NT1.[2:1], PNCH:=V=22, B:=T-18);               12657000 T  027:0
    BEGIN DS:=16 LIT"<<<<<<<<<<<<<<< ";                                     12657500 T  027:2
        CI:=CI+PNCH; GO TO PRNT; DS:=7 LIT"  PUNCH"; GO TO L1;              12658000 T  028:3
    PRNT:DS:=7 LIT"PRINTER";                                                12658500 T  028:0
    L1:  DS:=21 LIT" BACK UP FILE SPACED ";                                 12659000 T  028:1
        CI:=CI+C; GO TO FER; DS:=4 LIT"BACK"; GO TO L2;                     12659500 T  028:1
    FER: DS:=4 LIT" FOR";                                                   12660000 T  028:0
    L2:  DS:=4 LIT"WARD";                                                   12660500 T  028:3
        SI:=LOC A; DS:=6 DEC; B:=DI; DI:=DI-6;                              12661000 T  029:2
        DS:=5 FILL; DI:=B;                                                  12661500 T  029:2
        CI:=CI+PNCH; GO TO LIN; DS:=5 LIT" CARD"; GO TO L3;                 12662000 T  029:0
    LIN: DS:=5 LIT" LINE";                                                  12662500 T  029:0
    L3:  DS:=17 LIT"S. >>>>>>>>>>>>>>>";                                    12663000 T  029:0
        B:=DI; SI:=B; SI:=SI-8; DS:=7 WDS;                                  12663500 T  029:2
    END;                                                                    12664000 T  029:2
                                                                                        12657500
    GO RETURNTRUE;                                                          12664500 T  029:3
                                                                            12664900 T  029:1
INITIALIZE;                                                                 12665000 T  029:1
                                                                            12665100 T  029:1
%   HANDLES MISCELLANEOUS SETUP TASKS, INCLUDING STARTING THE TIMING FOR    12665110 T  029:1
%   LOGGING, CHECKING AND READYING THE INPUT FILE AND SPREADING COMMON.     12665120 T  029:1
%                                                                           12665130 T  029:1
    RCW.[CF]:=P(.COM19,LOD) INX 1;                                          12665500 T  029:1
 $ SET OMIT = NOT RJE                                                       12665750 T  030:1
    V:=COMMON.[VF];                                                         12667750 T  030:1
    IF P(.INREC,LOD)=0 THEN                                                 12668000 T  030:2
    BEGIN                                                                   12668250 T  030:2
 $ SET OMIT = NOT RJF                                                       12668500 T  030:0
        BEGIN                                                               12669250 T  030:0
            IF LABELTABLE[V].[1:5]#@21 THEN     % PRINTER CLOSED          12669500 T  030:0
            BEGIN                                                           12669750 T  030:2
                IF (UNIT:=COMMON.[UNITF])<16 THEN                           12670000 T  030:0
                IF LABELTABLE[UNIT]=@2100000060606060&                      12670250 T  030:3
                  TINU[V][6:30:18] THEN SETNOTINUSE(UNIT,0);                12670500 T  030:0
                GO TO INITIATE;                                             12670750 T  031:0
            END;                                                            12671000 T  031:2
                                                                                        12669750
            LABELTABLE[V].[5:1]:=0;                                         12671250 T  031:2
        END;                                                                12671500 T  031:0
                                                                                        12669250
        PRT[PIMIX,@25]:=0;                                                  12672000 T  031:0
        P:=(GETSPACE(91,IOBUFFERAREAV,1)+2)&90[8:38:10];%          %167-    12672500 P  031:3
    END;                                                                    12673000 T  032:0
                                                                                        12668250
 $ SET OMIT = NOT RJE                                                       12673500 T  032:0
    RDCTABLE[V].[8:6]:=PIMIX;                                               12675000 T  032:0
    STARTIMING(5,V);                                                        12675250 T  032:2
```

```
   START TIMING(0,UNIT:=COMMON.[UNITF]);                                          12675500 T  0323:2
   FPB:=PRT[P1MIX,3];                                                             12675750 T  0325:2
   COPY:=COMMON.[COPYF];                                                          12676000 T  0327:0
   IF UNIT=18 THEN                                                                12676500 T  0328:1
   BEGIN                                                                          12677000 T  0329:0
        MFID:=IF V=22 THEN "PUD    " ELSE "PBD    ";                             12677500 T  0329:2
$ SET OMIT = NOT RJE                                                              12678000 T  0332:1
        FIRSTFID:=LABELTABLE[V],[6:42];                                           12679500 T  0332:1
$ SET OMIT = NOT PACKETS                                                          12680000 T  0334:2
        IF NOT COMMON.[NOTP] THEN BEGIN PCOPY:=COPY; COPY:=0 END;                 12680250 T  0334:2
                                                                                                  12680250
        PFIRSTFID:=                                                               12680500 T  0337:2
$ POP OMIT                                                                        12681000 T  0337:2
        FID:=FIRSTFID;                                                            12681500 T  0337:2
        SEARCHVAL:=3;                                                             12682000 T  0338:3
        IF FINDFILE THEN GO RETURNFALSE;                                          12682500 T  0339:2
   END ELSE                                                                       12684000 T  0341:3
                                                                                                  12677000
   BEGIN                                                                          12684500 T  0341:3
        ABORTED:=0;                                                               12686000 T  0346:0
        NOCONT:=((NUM:=COMMON.[NUMF]) OR COPY)≠0;                                 12686500 T  0346:3
        MFID:=MULTITABLE[UNIT];                                                   12687000 T  0349:2
        IF LABELTABLE[UNIT].[1:5]≠@21 THEN      % UNIT WAS CL-ED WHILE           12687300 T  0350:2
        BEGIN ABORTED:=2;                       % WE WERE SCHEDULED.              12687400 T  0352:0
            GO RETURNFALSE;                                                       12687500 T  0353:1
        END;                                                                      12687600 T  0353:3
                                                                                                  12687400
        FID:=LABELTABLE[UNIT]:=(*P(DUP))&0[5:47:1];                               12687700 T  0353:3
        RDCTABLE[UNIT].[8:6]:=P1MIX;                                              12688000 T  0356:3
        RDYTAPE;                                                                  12689000 T  0359:1
        IF SPACETOFILE THEN                                                       12690500 T  0360:0
        BEGIN                                                                     12691000 T  0361:0
            IF T=3 THEN INVALIDNUM;             % SET BY READTAPE IF EOT.      12691500 T  0361:2
            GO RETURNFALSE;                                                       12692000 T  0364:0
        END;                                                                      12692500 T  0364:2
                                                                                                  12691000
    END;                                                                          12693000 T  0364:2
                                                                                                  12684500
    SETUPINREC;                                                                   12693500 T  0364:2
    GO RETURNTRUE;                                                                12694000 T  0366:0
                                                                                  12694400 T  0366:2
STARTANEWFILE:                                                                    12694500 T  0366:2
                                                                                  12694600 T  0366:2
%   HANDLES THE END OF A FILE AND FIGURES OUT WHAT TO DO NEXT. BUT                12694610 T  0366:2
%   FIRST, THE LOG MUST BE TAKEN CARE OF. (DONT USE T BETWEEN HERE AND            12694620 T  0366:2
%   THE TEST AT 12705750.)                                                        12694630 T  0366:2
%                                                                                 12694640 T  0366:2
    IF ABORTED=2 THEN GO TO TAPECL;                                               12694800 T  0366:2
    IF SIGNEDON THEN                                                              12695000 T  0367:3
    BEGIN                                                                         12695500 T  0368:0
        LOGINFO[12]:=*P(DUP)+PROCTIME[P1MIX]+CLOCK+P(RTR);                        12696000 T  0368:2
        LOGINFO[13]:=IOTIME[P1MIX]-(IOTIME[P1MIX]:=LOGINFO[13]);                  12696500 T  0371:3
        OLDIDLETIME:=OLDIDLETIME+LOGINFO[12];                                     12697000 T  0375:0
        PROCTIME[P1MIX]:=*P(DUP)-LOGINFO[12];                                     12697500 T  0376:2
        IDLETIMER;                                                                12698000 T  0378:3
        LOGINFO[14]:=JAR[P1MIX,7]-(JAR[P1MIX,7]:=LOGINFO[14]);                    12698500 T  0380:0
        LOGINFO[17]:=XCLOCK+P(RTR);                                               12699000 T  0384:1
```

```
        LOGINFO[18]:=(DSED×2)&DATE[1:18:30];                                    12699500 T  0386:0
        LOGINFO[23]:=FPB[3]&TINU[UNIT][24:18:12];                               12700000 T  0390:0
        LOGINFO[28]:=FPB[8]&TINU[V][24:18:12]&FORMTOG[42:47:1];   %750-         12700500 P  0392:3
        TINU[UNIT].[18:12]:=0; TINU[V].[18:12]:=0;                              12701000 T  0396:2
        SIGNEDON:=LOGINFO[24]+CLOCK+P(RTR);                                     12701500 T  0401:2
        LOGINFO[24]:=LOGINFO[29]:=SIGNEDON;                                     12702000 T  0403:2
        FPB[4]:=(*P(DUP))-SIGNEDON;                                             12702500 T  0405:3
        FPB[9]:=(*P(DUP))-SIGNEDON;                                             12703000 T  0407:3
        LOGSPACE([LOGINFO[0]],30);                                              12703500 T  0409:3
        FORGETSPACE(LOGINFO);                                                   12704000 T  0411:0
        SIGNEDON:=0;                                                            12704500 T  0412:0
    END;                                                                        12705000 T  0412:3
                                                                                         12695500
%                                                                               12705100 T  0412:3
%   IF DSED OR QTED, SKIP THE CHECKS FOR COPIES.                                12705110 T  0412:3
%                                                                               12705120 T  0412:3
    IF (TERMFLAG:=DSED OR QTED×3) THEN                                          12705250 T  0412:3
      IF V=22 THEN GO TO PNCHDS ELSE GO TO PRNTDS;                              12705500 T  0417:0
%                                                                               12705600 T  0419:1
%   T IS SET IF THE FIRST GET FAILS. THIS SHOULD ONLY HAPPEN AT THE END         12705610 T  0419:1
%   OF A BACK-UP TAPE. NOTE THAT IF A FILE NUMBER IS SPECIFIED, INITIAL-        12705620 T  0419:1
%   IZE ONLY SPACES TO ITS START, SO WE MAY CATCH AN INVALID NUMBER             12705630 T  0419:1
%   HERE. SINCE ONLY ONE FILE IS PRINTED WHEN A NUMBER IS GIVEN, IF WE          12705640 T  0419:1
%   ARRIVE HERE, IT MUST HAVE BEEN A BAD NUMBER. IF IT IS DESIRED TO            12705650 T  0419:1
%   CONTINUE DOWN THE TAPE AFTER THE SPECIFIED FILE, THIS TEST WILL NEED        12705660 T  0419:1
%   TO BE CHANGED.                                                              12705670 T  0419:1
%                                                                               12705680 T  0419:1
    IF T THEN                              % FIRST GET FAILED                    12705750 T  0419:1
      IF UNIT≠18 THEN                                                           12706000 T  0419:2
      BEGIN                                                                     12706250 T  0420:3
          IF COMMON.[NUMF]≠0 THEN INVALIDNUM;                                   12706500 T  0421:1
          GO TO TAPEND;                                                         12706750 T  0424:0
      END ELSE GO REMOVEM;                                                      12707000 T  0424:2
                                                                                         12706250
%                                                                               12707100 T  0424:2
      IF (COPY:=COPY-1) GTR 0 THEN       % MORE COPIES OF FILE RQD.            12707250 T  0424:2
      BEGIN                                                                     12707500 T  0426:1
          IF V=22 AND PUNCHLCK THEN                                             12707750 T  0426:3
          BEGIN                                                                 12708000 T  0428:2
PNCHLK:       STREAM(P1MIX, T:=T:=SPACE(10));                                   12708250 T  0429:0
              BEGIN DS:=25 LIT"#PNCH LOCKED:PRNPBT/DISK=";                      12708500 T  0432:0
                  SI:=LOC P1MIX; DS:=2 DEC; DS:=LIT"←";                         12708750 T  0435:2
                  DI:=DI-3; DS:=FILL;                                           12709000 T  0436:2
              END;                                                              12709250 T  0437:0
                                                                                         12708500
              SPOUT(T);                                                         12709500 T  0437:1
              REPLY[P1MIX]:=NABS(T:=VOK&VWY[36:42:6]&VQT[30:42:6]);             12709750 T  0438:2
              COMPLEXSLEEP(REPLY[P1MIX]>0 OR DSED);                             12710000 T  0442:2
09635000  ACCIDENTAL ENTRY AT 1                                                 12710250 T  0449:3
              IF NOT WHYSLEEP(T) THEN GO TO PNCHLK;                             12710500 T  0451:0
              IF DSED OR QTED THEN GO STARTANEWFILE;                            12710750 T  0455:0
          END;                                                                           12708000
          IF UNIT=18 THEN                          % DISK                        12711000 T  0455:0
          BEGIN                                                                 12711250 T  0455:3
 $ SET OMIT = NOT PACKETS                                                       12711500 T  0456:1
              IF NOT STOG THEN STOG:=SEARCHVAL=3;                               12712000 T  0456:1
```

```
 $ POP OMIT                                                                    12712500 T  045812
PRINTITAGAIN:                                                                  12713000 T  045812
              FID:=FIRSTFID;                                                   12713500 T  045812
              SEARCHVAL:=5;                                                    12714000 T  045911
              IF FINDFILE THEN GO TO EOF ELSE GO TO CONTINUE;                  12714500 T  046010
         END;                                                                  12715000 T  046210
                                                                                          12711250
%                                          % TAPE                              12715400 T  046210
         IF RDCTABLE[UNIT].[14:10]#1 THEN        % THIS ISNT FIRST REEL         12715500 T  046210
         BEGIN                                                                 12716000 T  046312
              RDCTABLE[UNIT].[14:10]:=0;                                       12716500 T  046410
              IF NOT LOOKFORTAPE THEN GO TO EOF;                               12717000 T  046612
         END ELSE                                                              12717500 T  046812
                                                                                          12716000
              RDYTAPE;                                                        12718000 T  046812
         IF SPACETOFILE THEN GO TO EOF ELSE GO TO CONTINUE;                   12718500 T  047010
    END;                                                                      12719000 T  047210
                                                                                          12707500
 $ SET OMIT = NOT PACKETS                                                     12719500 T  047210
    IF UNIT=18 THEN                        % CHECK FOR COPIES OF PACKET       12720000 T  047210
    BEGIN                                                                     12720500 T  047213
         IF STOG THEN BEGIN SEARCHVAL:=3; STOG:=0 END;                        12721000 T  047311
                                                                                          12721000
         IF NOMOREFILES THEN                                                  12721500 T  047512
            IF (PCOPY:=PCOPY-1) GTR 0 THEN                                    12722000 T  047710
            BEGIN                                                             12722500 T  047911
                 FIRSTFID:=PFIRSTFID;                                         12723000 T  047913
                 GO PRINTITAGAIN;                                             12723500 T  048012
            END ELSE                                                          12724000 T  048110
                                                                                          12722500
         ELSE GO CONTINUE;                                                    12724500 T  048110
    END;                                                                      12725000 T  048112
                                                                                          12720500
 $ POP OMIT                                                                   12725500 T  048112
                                                                              12725900 T  048112
FOF:                                                                          12726000 T  048112
                                                                              12726100 T  048112
%    AT THIS POINT, WE ARE THROUGH WITH THIS FILE OR PACKET. CLEAN UP         12726110 T  048112
%    THE OUTPUT BEFORE GOING ON.                                              12726120 T  048112
%                                                                             12726130 T  048112
PRNTDS:                                                                       12728000 T  048112
PNCHDS:                                                                       12740000 T  048112
    IF UNIT#18 THEN                        % TAPE                             12740500 T  048112
    BEGIN                                                                     12741000 T  048211
         IF TERMFLAG OR NOCONT OR ABORTED THEN                                12741500 T  048213
         BEGIN                                                                12742000 T  048410
TAPEND:                                                                       12742500 T  048412
              REWIND;                                                         12743000 T  048412
              GO TO TEST;                                                     12743500 T  048610
         END ELSE                                                             12744000 T  048612
                                                                                          12742000
         BEGIN                                 % TRY THE NEXT FILE            12744500 T  048612
              NUM:=NUM+1;                                                     12745000 T  048710
              RECOUNT:=@77777;                                                12745500 T  048811
CONTINUE:     SETUPINREC;                                                     12746000 T  048910
RETURNFALSE:                                                                  12746500 T  049010
              P(0);                                                           12747000 T  049010
```

```
                GO RETURNTOCOM19;                                                    12747500 T  0490:1
            END;                                                                     12748000 T  0492:0
                                                                                                 12744500
        END;                                                                         12748500 T  0492:0
                                                                                                 12741000
                                                                                     12748900 T  0492:0
REMOVEM:                                                                             12749000 T  0492:0
                                                                                     12749100 T  0492:0
%   DISK - CLOSE THE OPENED FILES AND, IF NOT QTED, REMOVE THEM.                     12749110 T  0492:0
%                                                                                    12749120 T  0492:0
        IOD:=IF SEARCHVAL=3 THEN FID ELSE NOT 0;                                     12749500 T  0492:0
        SEARCHVAL:=13; REMOVEIT;                                                     12750000 T  0495:0
        FPB[4]:=(*P(DUP))+CLOCK+P(RTR);                                              12750250 T  0497:0
        IF TERMFLAG#3 THEN                          % NOT QT-ED                       12750500 T  0499:2
        BEGIN                                                                        12751000 T  0500:1
            IOD:=NOT 0;                                                              12751500 T  0500:3
            SEARCHVAL:=7; REMOVEIT;                                                  12752000 T  0501:3
TEST:                           % FOR CONTINUATION FOR AUTOPRINT OR RJE.             12752500 T  0504:0
            IF AUTOPRINT AND NOT (FORMTOG OR TERMFLAG) AND                           12753000 T  0504:0
               (TWO(V) AND SAVEWORD)=0                                               12753500 T  0506:0
 $ SET OMIT = NOT RJE                                                                12753750 T  0507:1
            THEN                                                                     12755000 T  0507:1
              IF (COMMON:=PRINTORPUNCHWAIT(-V,-STA))#0 THEN GO TO STOPTIME;          12755500 T  0508:0
        END;                                                                         12756000 T  0511:0
                                                                                                 12751000
TAPECL:                                                                              12756400 T  0511:2
        COMMON:=0;                                                                   12756500 T  0511:2
        FORGETSPACE(B);                                                              12757000 T  0512:1
 $ SET OMIT = NOT RJE                                                                12757350 T  0513:0
        SETNOTINUSE(V,FORMTOG);                                                      12757500 T  0513:0
STOPTIME:                                                                            12757750 T  0514:0
        STOPTIMING(5,1023);                                                          12758000 T  0514:0
RETURNTRUE:                                                                          12758250 T  0515:0
        P(1);                                                                        12758500 T  0515:0
RETURNTOCOM19:                                                                       12759000 T  0515:1
        P(0,RDS,1,SUB,0,XCH,CFX,STF);                                                12759500 T  0515:1
END OF FIRST PRINTER BACKUP SPECIAL CASES PROCEDURE;                                 12760000 T  0518:2
                                                                                                 12501000
                                                                                    SIZE= 0519 WORDS
```

```
                PROCEDURE PRNPBTSPECASE2(Z);                                                    12800000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00381
PRT(621) = PRNPBTSPECASE2
                %                                                                               12800100 T  0000:0
                %   THIS PROCEDURE HANDLES ADDITIONAL THINGS FOR COM19. VALUES OF Z ARE:        12800110 T  0000:0
                %   0     INITAILIZE LOGGING.                                                   12800120 T  0000:0
                %   1     WRITE ABORT OR DSED MESSAGE AND CONSTRUCT ENDING LABEL.               12800130 T  0000:0
                %   2     HANDLE PARITY ON INPUT FILE.                                          12800140 T  0000:0
                %                                                                               12800150 T  0000:0
                VALUE Z;  REAL Z;                                                               12800500 T  0000:0
                BEGIN                                                                           12801000 T  0000:0
                    REAL    RCW=+0, MSCW=-2, COMMON=-4;                                         12801500 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
STACK(F-4) = COMMON
                    ARRAY   INREC=+1[*];                                                        12802000 T  0000:0
STACK(F+1) = INREC
                    ARRAY   FPB=INREC+1[*], LOGINFO=FPB+1[*], HEADER=LOGINFO+1[*];              12802500 T  0000:0
STACK(F+2) = FPB
STACK(F+3) = LOGINFO
STACK(F+4) = HEADER
                    REAL    UNIT=HEADER+1, V=UNIT+1, COPY=V+1, MFID=COPY+1, FID=MFID+1,         12803000 T  0000:0
STACK(F+5) = UNIT
STACK(F+6) = V
STACK(F+7) = COPY
STACK(F+10) = MFID
STACK(F+11) = FID
                        IOD=FID+1, T=IOD+1, B=T+1;                                              12803500 T  0000:0
STACK(F+12) = IOD
STACK(F+13) = T
STACK(F+14) = B
                    REAL    SEARCHVAL=B+1, CURROW=SEARCHVAL+1, FIRSTFID=CURROW+1,               12804000 T  0000:0
STACK(F+15) = SEARCHVAL
STACK(F+16) = CURROW
STACK(F+17) = FIRSTFID
                        SEGNR=FIRSTFID+1;                                                       12804500 T  0000:0
STACK(F+20) = SEGNR
                    REAL    X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;                             12805000 T  0000:0
STACK(F+15) = X
STACK(F+16) = NUM
STACK(F+20) = RECOUNT
                    BOOLEAN SIGNEDON=SEGNR+1, FORMTOG=SIGNEDON+1, ABORTED=FORMTOG+1;            12805500 T  0000:0
STACK(F+21) = SIGNEDON
STACK(F+22) = FORMTOG
STACK(F+23) = ABORTED
                    BOOLEAN NOCONT=FIRSTFID;                                                    12806000 T  0000:0
STACK(F+17) = NOCONT
                    $ SET OMIT = NOT PACKETS                                                    12806500 T  0000:0
                    BOOLEAN STOG=ABORTED+1;                                                     12807000 T  0000:0
STACK(F+24) = STOG
                    REAL    PCOPY=STOG+1, PFIRSTFID=PCOPY+1;                                    12807500 T  0000:0
STACK(F+25) = PCOPY
STACK(F+26) = PFIRSTFID
                    $SET OMIT = NOT (RJE AND PACKETS)                                           12808000 T  0000:0
                    $ SET OMIT = PACKETS                                                        12809500 T  0000:0
                                                                                                12812000 T  0000:0
                        LABEL   SLEAP, WHY, EXITTOCOM19;                                        12812500 T  0000:0
```

```
    LABEL   SIGNIN, ABORTMSG, PARERR;                                                  12813000 T  0000:0
    SWITCH  SW :=                                                                      12813500 T  0000:0
            SIGNIN, ABORTMSG, PARERR;                                                  12814000 T  0000:0
    DEFINE  DSED        = TERMSET(P1MIX)#,                                             12814500 T  0000:0
            QTED        = (PRT[P1MIX,@25]#0)#,                                         12815000 T  0000:0
            VF          = 43:5#,                                                       12815100 T  0000:0
            UNITF       = 38:5#,                                                       12815200 T  0000:0
            COPYF       = 30:8#,                                                       12815300 T  0000:0
            NUMF        = 22:8#,                                                       12815400 T  0000:0
            NOTP        = 29:1#,                                                       12815500 T  0000:0
            COPYO       = 21:1#;                                                       12815600 T  0000:0
                                                                                       12815900 T  0000:0
%*************************************************************************           12816000 T  0000:0
                                                                                       12816500 T  0000:0
    SUBROUTINE IDLETIMER;                                                              12817000 T  0000:0
    BEGIN                                                                              12817500 T  0001:0
          STOPLOG(P1MIX,1);                                                            12817600 T  0001:0
          P(P1MIX); P1MIX:=0;                                                          12818000 T  0003:2
          IDLETIME;                                                                    12818500 T  0004:2
          P1MIX:=P;                                                                    12819000 T  0005:0
 $ SET OMIT = NOT(NEWLOGGING)                                                          12819399 T  0005:2
          STARTLOG(P1MIX);                                                             12819500 T  0005:2
    END IDLETIMER;                                                                     12820000 T  0008:0
                                                                                                      12817500
                                                                                       12820500 T  0008:1
%*************************************************************************           12821000 T  0008:1
                                                                                       12821500 T  0008:1
    SUBROUTINE          FM;    %% BUILD AND SPOUT FORMS MESSAGE       %%             12822000 T  0008:1
    BEGIN                                                                              12822500 T  0009:0
          STREAM(U:=TINU[V], P1MIX, INREC, D:=T:=SPACE(10));                           12823000 T  0009:0
          BEGIN DS:=LIT"#";                                                            12823500 T  0013:0
                SI:=LOC U; SI:=SI+5; DS:=3 CHR;                                        12824000 T  0013:2
                DS:=20 LIT" FM RQD:PRNPBT/DISK="; DS:=2 DEC;                           12824500 T  0014:1
                U:=DI; DI:=DI-2; DS:=FILL; DI:=U;                                      12825000 T  0017:1
                SI:=INREC; DS:=5 LIT" FOR ";                                           12825500 T  0018:1
                SI:=SI+1; DS:=7 CHR; DS:=LIT"/";                                       12826000 T  0019:2
                SI:=SI+1; DS:=7 CHR; DS:=4 LIT" OF ";                                  12826500 T  0020:2
                SI:=SI+1; DS:=7 CHR; DS:=LIT"/";                                       12827000 T  0021:3
                SI:=SI+1; DS:=7 CHR;                                                   12827500 T  0022:3
                DS:=LIT"←";                                                            12828000 T  0023:1
          END;                                                                         12828500 T  0023:3
                                                                                                      12823500
          SPOUT(T);                                                                    12829000 T  0024:0
          REPLY[P1MIX] :=                                                              12829500 T  0025:1
                NABS(T:=VOK&VWY[36:42:6]&VQT[30:42:6]&VFM[24:42:6]);                   12830000 T  0025:3
    END   FM SUBROUTINE;                                                               12830500 T  0030:1
                                                                                                      12822500
                                                                                       12831000 T  0030:2
%*************************************************************************           12831500 T  0030:2
    SUBROUTINE          BADFM;        %BUILD AND SPOUT BAD FM MESSAGE    %           12832000 T  0030:2
    BEGIN                                                                              12832500 T  0031:0
          STREAM(A:=TINU[T],MX:=P1MIX,T:=T:=SPACE(10));                                12833000 T  0031:0
          BEGIN DS:=19 LIT"INVALID INPUT UNIT ";                                       12833500 T  0034:2
                SI:=LOC MX; DS:=2 DEC;DS:=2 LIT"FM";                                   12834000 T  0037:1
                SI:=LOC A; SI:=SI+5; DS:=3 CHR;                                        12834500 T  0038:1
                DS:=LIT "←"; DI:=DI-8; DS:=FILL;                                       12835000 T  0039:0
          END;                                                                         12835500 T  0040:0
                                                                                                      12833500
```

```
        SPOUT(T);
    END BADFM SUBROUTIN;


%*************************************************************************

    SUBROUTINE WRITEBANDEJECT;
    BEGIN
 $ SET OMIT = NOT RJE
        BEGIN
            P(WAITIO(B INX @210104000000,0,V),DEL);
            IF V#22 THEN %                                          %150-
                IF SEPARATE THEN P(WAITIO(@4000100000,0,V),DEL) %150-
                ELSE             P(WAITIO(@4002000000,0,V),DEL);%150-
        END;

    END;


%*************************************************************************

%
    P(Z,MSCW,STF);
    GO TO SW[P];

SIGNIN:

%   HANDLES FIRST RECORD OF FILE, PICKING UP LOGGING INFO AS WELL AS
%   COPIES OR FORM SPECIFICATIONS. NOTE THAT LABEL INFO IS SAVED IN
%   LOGARRAY FOR USE AT ABORTMSG. TIMING IS STARTED AT INITAILIZE AND
%   STOPPED IN REWIND, AT REMOVEM OR AT STOPTIME FOR TAPE, DISK AND THE
%   OUTPUT UNIT RESPECTIVELY. LOGARRAY IS USED TO REMOVE THE TIME
%   ASSOCIATED WITH A GIVEN BACK UP FILE FROM THE TIMING IN THE FPB AND
%   LOG IT TO THE USER. THAT IS DONE IN SIGNOUT. THUS, THE TIME LOGGED
%   AT PRNPRT/DISK EOJ IS OVERHEAD TIME OCURRING DURING SWITCHING FROM
%   FILE TO FILE.
%
    LOGINFO := SAVEARRAYDESC(31,LOGAREAV);                          %167-
    IF FORMTOG:=INREC[13] THEN FM;
    IF COPY LEQ 0 AND NOT COMMON.[COPYO] THEN
      COPY:=IF (INREC[14] AND NOT @377)=0 THEN INREC[14]+1 ELSE 0;
    LOGINFO[0]:=3;
    STREAM(S:=[INREC[4]],D:=[LOGINFO[1]]);
    BEGIN SI:=S; DS:=9 WDS; END;

    LOGINFO[10]:=5;
    LOGINFO[11]:=2;
    LOGINFO[12]:=-(PROCTIME[P1MIX]+CLOCK+P(RTR));
    LOGINFO[13]:= IOTIME[P1MIX];
    IDLETIMER; LOGINFO[14]:=JAR[P1MIX,7];
    LOGINFO[15]:=DATE;
    LOGINFO[16]:=XCLOCK+P(RTR);
    LOGINFO[19]:=INREC[15];                                         %132-
    LOGINFO[20]:="PRINTER";
    LOGINFO[21]:="BACK-UP";
    LOGINFO[22]:=LOGINFO[27]:=0;
    LOGINFO[24]:=-CLOCK-P(RTR);
```

```
12836000 T  0040:1
12836500 T  0041:2
                12832500
12837000 T  0041:3
12837500 T  0041:3
12838000 T  0041:3
12838500 T  0041:3
12839000 T  0042:0
12839500 T  0042:0
12842500 T  0042:0
12843000 T  0042:0
12843500 P  0044:0
12843600 C  0044:3
12843700 C  0048:0
12844000 T  0052:2
                12842500
12844500 T  0052:2
                12839000
12845000 T  0054:0
12845500 T  0054:0
12846000 T  0054:0
12846500 T  0054:0
12847000 T  0054:0
12847500 T  0055:0
12847600 T  0057:1
12848000 T  0057:1
12848100 T  0057:1
12848110 T  0057:1
12848120 T  0057:1
12848130 T  0057:1
12848140 T  0057:1
12848150 T  0057:1
12848160 T  0057:1
12848170 T  0057:1
12848180 T  0057:1
12848190 T  0057:1
12848200 T  0057:1
12848500 P  0057:1
12849000 T  0061:0
12849500 T  0064:0
12850000 T  0066:0
12850500 T  0071:0
12851000 T  0072:1
12851500 T  0073:3
                12851500
12852000 T  0074:2
12852500 T  0075:3
12853000 T  0077:0
12853500 T  0079:3
12854000 T  0081:1
12854500 T  0084:0
12855000 T  0085:1
12855500 P  0087:0
12856000 T  0088:2
12856500 T  0089:3
12857000 T  0091:0
12857500 T  0093:1
```

```
                LOGINFO[25]:=INREC[0]; % SAVE LABEL INFO FOR ABORT                    12858000 T  0095:1
                LOGINFO[26]:=INREC[1];                                               12858500 T  0096:3
                LOGINFO[28]:=M[INREC INX NOT 14];                                    12859000 T  0098:1
                LOGINFO[29]←INREC[2];                                                12859500 T  0101:1
                LOGINFO[30]←INREC[3];                                                12860000 T  0102:3
              RDCTABLE[V].[47:1]←INREC[0]="FULLPGE";   % LINES66 OPTION      %724-  12860100 C  0104:1
                IF FORMTOG THEN                                                      12860500 T  0107:2
            SLEAP:                                                                   12861000 T  0107:3
                BEGIN COMPLEXSLEEP(REPLY[P1MIX] GEQ 0 OR DSED OR QTED);              12861500 T  0108:1
12710000    ACCIDENTAL ENTRY AT 0
                    IF NOT WHYSLEEP(T) THEN                                          12862000 T  0117:2
                    BEGIN FM; GO TO SLEAP END;                                       12862500 T  0118:2
                                                                                                 12862500
                    IF REPLY[P1MIX].[CF]=VFM THEN                                    12863000 T  0124:0
                      IF (T:=REPLY[P1MIX].[FF]) NEQ 20 AND T NEQ 21 THEN             12863500 T  0125:2
                      BEGIN                          % ILLEGAL UNIT.                 12864000 T  0129:0
                           LABELTABLE[T]:=@114;                                      12864500 T  0129:2
                           RADFM;                                                    12865000 T  0130:3
                           READY:=READY AND (T:=NOT TWO(T));                         12865500 T  0132:0
                           RRRMFCH:=RRRMFCH AND T;                                   12866000 T  0134:2
                           SAVEWORD:=SAVEWORD AND T; FM; GO SLEAP                    12866500 T  0135:3
                 $ SET OMIT = NOT(RJE AND DATACOM )                                  12867000 T  0138:2
                    END ELSE                                                         12873000 T  0138:2
                                                                                                 12864000
                    IF T≠V THEN                                                      12873500 T  0138:2
                    BEGIN                          % SWITCH UNITS.                 12874000 T  0139:3
                           LABELTABLE[T] := LABELTABLE[V];                           12874500 T  0140:1
                           RDCTABLE[T]   := RDCTABLE[V];                             12875000 T  0141:3
                           MULTITABLE[T] := MULTITABLE[V];                           12875500 T  0143:1
                           LABELTABLE[V] := MULTITABLE[V] := RDCTABLE[V] := 0;       12876000 T  0144:3
                           FPB[8].[36:6]:=(V:=T)+1;                                  12876500 T  0148:0
                    END;                                                             12877000 T  0151:2
                                                                                                 12874000
                END;                                                                 12877500 T  0151:2
                                                                                                 12861500
                FORMTOG:=(FORMTOG OR PUNCHLCK AND V=22) AND NOT (DSED OR QTED);      12878000 T  0151:2
                SIGNEDON:=TRUE;                                                      12878500 T  0158:0
                GO EXITTOCOM19;                                                      12879000 T  0158:3
                                                                                     12879100 T  0159:1
            ABORTMSG:                                                                12879500 T  0159:1
                                                                                     12879600 T  0159:1
            %   ABORTED=3 IMPLIES ABORT HAS OCCURRED. CURRENTLY, NOTHING ATTEMPTS TO 12879610 T  0159:1
            %   DISTINGUISH BETWEEN 1 AND 3, BUT ABORTED MUST BE SET HERE FOR TAPE   12879620 T  0159:1
            %   SO WHY NOT MAKE IT DIFFERENT.                                        12879630 T  0159:1
            %                                                                        12879640 T  0159:1
                ABORTED:=3;                                                          12880000 T  0159:1
                STREAM(T:=DSED OR QTED, B);                                          12880500 T  0160:0
                BEGIN                                                                12881000 T  0164:0
                     DS:=8 LIT"#"; SI:=B; DS:=16 WDS; DI:=B;                         12881500 T  0164:0
                     CI:=CI+T; GO TO AB;                                             12882000 T  0166:0
                     DI:=DI+24;                                                      12882500 T  0166:3
                     DS:=34 LIT"  BACK-UP TERMINATED BY OPERATOR  ";                 12883000 T  0167:0
                     GO TO LEND;                                                     12883500 T  0171:2
                AB:  DI:=DI+34; DS:=11 LIT"  ABORTED  ";                             12884000 T  0171:3
                LEND:                                                                12884500 T  0173:3
                END;                                                                 12885000 T  0173:3
                                                                                                 12881000
```

```
                WRITEBANDEJECT;
                IF V≠22 AND SIGNEDON THEN
                BEGIN
                     STREAM(S←LOGINFO[1],T←0,8);
                     BEGIN DS← 8LIT" LABEL  "; SI←S; 24(SI←SI+8); DS←16CHR;
                           SI←SI+8; DS←8CHR; T←SI; SI←S; DS←9WDS; SI←T;
                           SI←SI+1; DS←LIT" "; DS←7CHR; DS←LIT"/"; SI←SI+1; DS←7CHR;
                           DS← 12 LIT " ";
                     END;

                     WRITEBANDEJECT;
                     IF NOT SEPARATE THEN P(WAITIO(@4000100000,0,V),DEL);      %150-
                END;

                GO TO EXITTOCOM19;

           PARERR:

           %    BUILDS ERROR MESSAGE FOR OUTPUT AND ALLOWS OPERATOR TO OK OR DS.
           %    T IS USED TO PASS BACK WHETHER OR NOT TO TERMINATE.
           %
                IF V=22 THEN GO TO WHY;
                STREAM(A:=UNIT, T:=T:=SPACE(15));
                BEGIN 22(DS:=2 LIT ">>");SI:=LOC A;SI:=SI+7;
                     IF SC="B" THEN DS:=6 LIT " DISK " ELSE
                     DS:=6 LIT " TAPE ";
                     DS:=26 LIT "PARITY ON PRINTER BACK UP ";
                     22(DS:=2 LIT ">>");
                END STREAM;

                 $ SET OMIT = NOT(RJE AND DATACOM )
                     P(WAITIO(T&16[CTF],0,V),DEL);
                     FORGETSPACE(T);
                WHY:
                     FILEMESS("#PARITY","ERROR  ",0,0,0);
                     REPLY[P1MIX]:=-VQT&VWY[36:42:6]&VOK[30:42:6];
                     COMPLEXSNOOZE(MIXMAX,REPLY[P1MIX] GEQ 0 OR DSED OR QTED);
12861500        ACCIDENTAL ENTRY AT 0
                     IF NOT WHYSLEEP(VQT&VWY[36:42:6]&VOK[30:42:6]) THEN GO TO WHY;
                     T:=DSED OR QTED;
                EXITTOCOM19:
                     P(0,RDS,0,XCH,CFX,STF);
                END OF SECOND GROUP OF PRINTER BACKUP SPECIAL CASES;
```

```
12885500 T  0174:0
12886000 T  0175:0
12886500 T  0176:1
12887000 T  0176:3
12887500 T  0178:1
12888000 T  0180:3
12888500 T  0182:1
12889000 T  0184:1
12889500 T  0186:0
                    12887500
12890000 T  0186:1
12890100 C  0187:0
12890500 T  0190:0
                    12886500
12891000 T  0190:0
12891100 T  0192:0
12891500 T  0192:0
12891600 T  0192:0
12891610 T  0192:0
12891620 T  0192:0
12891630 T  0192:0
12892000 T  0192:0
12892500 T  0193:1
12893000 T  0196:1
12893500 T  0197:3
12894000 T  0199:2
12894500 T  0200:2
12895000 T  0204:0
12895500 T  0205:0
                    12893000
12896000 T  0205:1
12897500 T  0205:1
12898000 T  0207:1
12898500 T  0208:0
12899000 T  0208:0
12899500 T  0210:2
12900000 T  0214:0

12900500 T  0222:2
12901000 T  0225:3
12901500 T  0229:2
12902000 T  0229:2
12902500 T  0231:2
                    12801000
                SIZE= 0234 WORDS
```

```
                PROCEDURE COM19;                                                    13000000 T  0000:0
                                                                  START OF REL SEGMENT: DISK ADDRESS = 00389
                %                                                                   13000100 T  0000:0
                %   COM19, TOGETHER WITH PRNPBTSPECASE1 AND PRNPBTSPECASE2 WHICH SHARE  13000110 T  0000:0
                %   ITS STACK, ARE THE WORKING PART OF PRINTER BACK-UP. INFORMATION IS   13000120 T  0000:0
                %   PASSED TO COM19 IN COMMON AND LABELTABLE, AS FOLLOWS:               13000130 T  0000:0
                %   COMMON.[43:5]  LOGICAL UNIT NUMBER OF OUTPUT UNIT.                  13000140 T  0000:0
                %          [38:5]  INPUT UNIT NUMBER. IF DISK, THE LABELTABLE ENTRY FOR 13000160 T  0000:0
                %                  THE OUTPUT UNIT CONTAINS THE FILE ID.               13000170 T  0000:0
                %          [30:8]  NUMBER OF COPIES SPECIFIED IN PB MESSAGE.           13000180 T  0000:0
                %          [22:8]  IF TAPE, STARTING FILE NUMBER GIVEN IN PB MESSAGE.  13000190 T  0000:0
                %                  IF DISK, =0 IF ENTIRE PACKET IS TO BE PRINTED, =1 IF 13000200 T  0000:0
                %                  NOT.                                                13000210 T  0000:0
                %          [21:1]  ON IF "=0" APPEARED IN PB MESSAGE.                  13000215 T  0000:0
                %   FOR RJE, COMMON IS THE ADDRESS OF A TWO WORD ARRAY. THE FIRST WORD  13000220 T  0000:0
                %   CONTAINS THE INFORMATION DESCRIBED ABOVE AND THE SECOND CONTAINS THE 13000230 T  0000:0
                %   FILE ID FOR DISK (WHICH IS IN LABELTABLE FOR NON-RJE FILES).        13000240 T  0000:0
                %                                                                       13000250 T  0000:0
                BEGIN                                                               13001000 T  0000:0
                    REAL    RCW=+0, COMMON=-4;                                      13002000 T  0000:0
STACK(F+0) = RCW
STACK(F-4) = COMMON
                    ARRAY   INREC[*], FPB[*], LOGINFO[*], HEADER[*];                13003000 T  0000:0
STACK(F+1) = INREC
STACK(F+2) = FPB
STACK(F+3) = LOGINFO
STACK(F+4) = HEADER
                    REAL    UNIT, V, COPY, MFID, FID, IOD, T, B;                    13004000 T  0000:0
STACK(F+5) = UNIT
STACK(F+6) = V
STACK(F+7) = COPY
STACK(F+10) = MFID
STACK(F+11) = FID
STACK(F+12) = IOD
STACK(F+13) = T
STACK(F+14) = B
                        REAL    SEARCHVAL, CURROW, FIRSTFID, SEGNR;             13005000 T  0000:0
STACK(F+15) = SEARCHVAL
STACK(F+16) = CURROW
STACK(F+17) = FIRSTFID
STACK(F+20) = SEGNR
                        REAL    X=SEARCHVAL, NUM=CURROW, RECOUNT=SEGNR;         13006000 T  0000:0
STACK(F+15) = X
STACK(F+16) = NUM
STACK(F+20) = RECOUNT
                        BOOLEAN SIGNEDON, FORMTOG, ABORTED;                     13007000 T  0000:0
STACK(F+21) = SIGNEDON
STACK(F+22) = FORMTOG
STACK(F+23) = ABORTED
                        BOOLEAN NOCONT=FIRSTFID;                                13008000 T  0000:0
STACK(F+17) = NOCONT
                    $ SET OMIT = NOT PACKETS                                    13009000 T  0000:0
                        BOOLEAN STOG;                                           13010000 T  0000:0
STACK(F+24) = STOG
                        REAL    PCOPY, PFIRSTFID;                               13011000 T  0000:0
STACK(F+25) = PCOPY
STACK(F+26) = PFIRSTFID
```

```
 $ SET OMIT = PACKETS                                                                13012000 T  0000:0
 $ SET OMIT = NOT RJF                                                                13015000 T  0000:0
%                                                                                    13017100 T  0000:0
%   THE LOCAL VARIABLES ARE USED AS FOLLOWS:                                         13017110 T  0000:0
%   ARRAYS                                                                           13017120 T  0000:0
%     INREC      ARRAY DESCRIPTOR FOR THE CURRENT RECORD.                            13017130 T  0000:0
%     FPB        FPB ARRAY. INPUT IS THE FIRST FILE; OUTPUT THE 2ND.                 13017140 T  0000:0
%     LOGINFO    ARRAY IN WHICH THE LOG ENTRY IS BUILT. THE FIRST TEN                13017150 T  0000:0
%                WORDS ARE THE CONTROL CARD ENTRY; THE NEXT 10, THE                  13017160 T  0000:0
%                PRINTER BACK-UP ENTRY AND THE LAST 10, THE FILE ENTRIES.            13017170 T  0000:0
%     HEADER     DISK FILE HEADER.                                                   13017180 T  0000:0
%   REALS                                                                            13017190 T  0000:0
%     UNIT       LOGICAL UNIT NUMBER FOR INPUT.                                      13017200 T  0000:0
%     V          LOGICAL UNIT NUMBER FOR OUTPUT.                                     13017210 T  0000:0
%     COPY       NUMBER OF COPIES OF THIS FILE TO BE PRINTED. IF IT IS               13017220 T  0000:0
%                NOT SPECIFIED, IT EQUALS 0.                                         13017230 T  0000:0
%     MFID       MULTI-FILE ID OF INPUT FILE.                                        13017240 T  0000:0
%     FID        FILE ID OF INPUT FILE.                                              13017250 T  0000:0
%     IOD, T     TEMPORARY STORAGE.                                                  13017260 T  0000:0
%     B          ADDRESS OF 90 WORD BUFFER FOR INPUT.                                13017270 T  0000:0
%   BOOLEANS                                                                         13017280 T  0000:0
%     SIGNEDON   ON IF LOGGING IS INITIALIZED. THIS SHOULD BE OFF ONLY               13017290 T  0000:0
%                FOR FILES WHICH DO NOT START AT THE BEGINING, E.G.,                 13017300 T  0000:0
%                WHEN A STARTING REEL IS SPECIFIED ON DISK.                          13017310 T  0000:0
%     FORMTOG    ON IF FORM IS SPECIFIED OR PNCHLOCK IS SET.                         13017320 T  0000:0
%     ABORTED    =1, DISK ABORTED BY H/L. CHECK IN GET TO FIND OUT WHERE.            13017330 T  0000:0
%                =2, TERMINATION DUE TO CL OF INPUT TAPE WHILE SCHEDULED.            13017335 T  0000:0
%                =3, TAPE ABORTED BY H/L. FOUND BY RECOUNT MISMATCH.                 13017340 T  0000:0
%                                                                                    13017350 T  0000:0
%   THE FOLLOWING APPLY ONLY TO DISK FILES:                                          13017360 T  0000:0
%     SEARCHVAL  THIRD PARAMETER FOR DIRECTORYSEARCH. IT IS 3 OR 5 DURING            13017370 T  0000:0
%                PRINTING, DEPENDING ON WHETHER IT IS THE FIRST COPY OR              13017380 T  0000:0
%                NOT, AND 13 OR 7 DURING FILE TERMINATION.                           13017390 T  0000:0
%     CURROW     INDEX OF THE ROW CURRENTLY BEING PRINTED.                           13017400 T  0000:0
%     FIRSTFID   FILE ID OF FIRST REEL, USED FOR MULTIPLE COPIES OF                  13017410 T  0000:0
%                MULTI-REEL FILES.                                                   13017420 T  0000:0
%     SEGNR      NUMBER OF NEXT SEGMENT TO READ FROM THE CURRENT ROW.                13017430 T  0000:0
%                                                                                    13017440 T  0000:0
%   THE FOLLOWING APPLY ONLY TO TAPES:                                               13017450 T  0000:0
%     X          TEMPORARY STORAGE.                                                  13017460 T  0000:0
%     NUM        NUMBER OF CURRENT FILE ON TAPE, USED FOR COPIES.                    13017470 T  0000:0
%     RECOUNT    NUMBER OF RECORDS PRINTED IN THIS FILE. THIS IS CHECKED             13017480 T  0000:0
%                AGAINST THE C-FIELD OF THE IO DESCRIPTORS IN THE FILE TO            13017490 T  0000:0
%                SPOT ABORTS.                                                        13017500 T  0000:0
%     NOCONT     TRUE IF CONTINUATION FROM FILE TO FILE IS NOT ALLOWED.              13017510 T  0000:0
%                                                                                    13017520 T  0000:0
%   THE FOLLOWING APPLY ONLY TO PACKETS:                                             13017530 T  0000:0
%     PCOPY      NUMBER OF COPIES FROM PB MESSAGE, WHICH MAY APPLY TO THE            13017540 T  0000:0
%                ENTIRE PACKET. "COPY" IS SET ONLY FROM LABEL EQUATION.              13017550 T  0000:0
%     PFIRSTFID  FILE ID OF FIRST FILE IN THE PACKET, USED FOR COPIES OF             13017560 T  0000:0
%                THE PACKET. FIRSTFID APPLIES TO INDIVIDUAL FILES WITHIN             13017570 T  0000:0
%                THE PACKET AND IS USED FOR COPIES SPECIFIED VIA LABEL               13017580 T  0000:0
%                EQUATION.                                                           13017590 T  0000:0
%     STOG       SET DURING THE FIRST PRINTING OF THE PACKET IF ONE OF               13017600 T  0000:0
%                THE FILES SPECIFIES MULTIPLE COPIES. IT IS USED TO                  13017610 T  0000:0
%                RESTORE THE VALUE OF 3 TO SEARCHVAL WHEN THE FILE IS                13017620 T  0000:0
%                COMPLETED.                                                          13017630 T  0000:0
```

```
%
%   THE FOLLOWING APPLIES ONLY TO RJE:
%     STA       TERMINAL UNIT AND BUFFER NUMBER OF THE RJE TERMINAL.
%
    LABEL   TRYNEXT, TAPERDR, TAPERD, TAPECHK, ABORT, NOGET, GOTTEN,
            START, RESTART, MAINLOOP, GOTIT, QUIT, TESTEND;
    DEFINE  DSED = TERMSET(P1MIX)#,
            QTED = (PRT[P1MIX,@25]≠0)#;
    DEFINE  LINECT = LOGINFO[27]#; %                                    %750-
    DEFINE  LOOKFORTAPE     = PRNPBTSPECASE1(0)#,
            NOMOREREELS     = PRNPBTSPECASE1(1)#,
            QTSPEC          = P(PRNPBTSPECASE1(2),DEL)#,
            INITIALIZE      = PRNPBTSPECASE1(3)#,
            STARTANEWFILE   = PRNPBTSPECASE1(4)#,
            SIGNIN          = PRNPBTSPECASE2(0)#,
            ABORTMSG        = PRNPBTSPECASE2(1)#,
            PARERR          = PRNPBTSPECASE2(2)#;

%************************************************************************

    BOOLEAN SUBROUTINE GET;
    BEGIN
        IF !NREC[17].[20:1] THEN GO TO NOGET;
        IF (INREC:=(NOT 17) !NX INREC).[CF] GEQ B.[CF] THEN
          IF UNIT≠18 THEN GO TO TAPECHK ELSE
        ELSE                            % READ NEXT BLOCK
        IF UNIT=18 THEN
        BEGIN
            IF SEGNR > HEADER[7]×3 THEN GO TRYNEXT; % END OF FILE
            IF (SEGNR GEQ HEADER[8]-1) THEN
            BEGIN                       % END OF ROW
                IF (CURROW:=CURROW+1) GEQ HEADER[9].[43:5]+10 THEN
TRYNEXT:          IF NOMOREREELS THEN GO TO NOGET;
                SEGNR:=0;
            END;

            INREC:=90 INX INREC;
            DISKIO(IOD,-B,90,HEADER[CURROW]+SEGNR);
            SEGNR:=SEGNR+3;
            SLEEP([IOD],IOMASK);
            IF IOD.[28:1] THEN
            BEGIN PARERR;
                IF T THEN GO TO NOGET;  % DSED OR QTED
            END;

            IF ABORTED THEN             % TEST FOR BAD IO DESC.
              IF (M[B INX 18].[6:42] FQV "       ")=NOT 0 THEN
              GO ABORT;
        END ELSE

        BEGIN                           % TAPE
TAPERDR:    X:=0;
TAPERD:     IF (IOD:=WAITIO(B,@2000040,UNIT)).[43:1] THEN
            BEGIN PARERR;
                IF T THEN GO TO NOGET;  % DSED OR QTED
            END;

            IF IOD.[42:1] OR X THEN
```

```
13017640 T  0000:0
13017650 T  0000:0
13017660 T  0000:0
13017670 T  0000:0
13018000 T  0000:0
13019000 T  0000:0
13020000 T  0000:0
13021000 T  0000:0
13021900 C  0000:0
13022000 T  0000:0
13023000 T  0000:0
13024000 T  0000:0
13025000 T  0000:0
13026000 T  0000:0
13027000 T  0000:0
13028000 T  0000:0
13029000 T  0000:0
13030000 T  0000:0
13031000 T  0000:0
13032000 T  0000:0
13033000 T  0000:0
13034000 T  0001:0
13035000 T  0001:0
13036000 T  0002:3
13037000 T  0006:0
13038000 T  0007:1
13039000 T  0007:3
13040000 T  0009:0
13041000 T  0009:2
13042000 T  0011:2
13043000 T  0013:0
13044000 T  0013:2
13045000 T  0016:2
13046000 T  0018:2
13047000 T  0019:1
                    13043000
13048000 T  0019:1
13049000 T  0020:3
13050000 T  0023:1
13051000 T  0024:2
13052000 T  0026:0
13053000 T  0026:3
13054000 T  0028:0
13055000 T  0029:0
                    13053000
13056000 T  0029:0
13057000 T  0029:1
13058000 T  0033:3
13059000 T  0034:1
                    13040000
13060000 T  0034:1
13061000 T  0036:0
13062000 T  0036:3
13063000 T  0039:0
13064000 T  0040:1
13065000 T  0041:1
                    13063000
13066000 T  0041:1
```

```
                    BEGIN
                         IF (X:=NOT X) THEN GO TO TAPERD;
                         IF M[B INX 3] THEN
                           IF LOOKFORTAPE THEN GO TO TAPERDR ELSE GO NOGET;
                    END;

                    IF (X:=M[B INX NOT 0])#90 THEN
                      IF (X AND @7775)=16 THEN    % OLD FORMAT TAPE
                      BEGIN
                           INREC.[CF]:=B INX 1;
                           INREC[17]:=M[B]&0[20:20:7];
                      END ELSE GO TO NOGET

                    ELSE
                    BEGIN
                         INREC:=90 INX INREC;
                         IF RECOUNT=@77777 THEN RECOUNT+INREC[17].[CF] ELSE
TAPECHK:                 IF (RECOUNT:=RECOUNT INX 1) # INREC[17].[CF] THEN
                         BEGIN
ABORT:                        ABORTMSG;
NOGET:                        P(0);
                              GO TO GOTTEN;
                         END;

                    END;

               END;

               P(1);
GOTTEN:        GET:=P;
          END;

          %
          %%%%%    START OF CODE    %%%%%
          %
          %   START IS USED FOR A NEW FILE (OR NEW PACKET), RESTART IS USED FOR
          %   A COPY (OR A NEW FILE WITHIN A PACKET).

          START:
               IF COMMON=0 THEN GO TO INITIATE;
               IF INITIALIZE THEN
               BEGIN
          RESTART: IF GET THEN
                   BEGIN
                        IF INREC[17].[1:11]=0 THEN SIGNIN ELSE GO GOTIT;
                        IF UNIT#18 THEN RECOUNT:=INREC[17].[CF];
                   END ELSE                    % BAD FIRST BLOCK, USUALLY EOT.

                   BEGIN P(1);
                        GO TO TESTEND;
                   END;

          MAINLOOP:
                   IF STOPSET(P1MIX) THEN STOPM(0);
                   IF (T:=PRT[P1MIX,@25])#0 OR DSED THEN
                   BEGIN
                        IF T<0 THEN                    % + OR - SPECIFIED.
```

```
13067000 T  0042:2
13068000 T  0043:0
13069000 T  0044:3
13070000 T  0046:1
13071000 T  0048:2
                    13067000
13072000 T  0048:2
13073000 T  0051:1
13074000 T  0053:0
13075000 T  0053:2
13076000 T  0055:2
13077000 T  0058:2
                    13074000
13078000 T  0058:2
13079000 T  0058:2
13080000 T  0061:0
13080100 T  0062:2
13081000 T  0065:1
13082000 T  0069:2
13083000 T  0070:0
13084000 T  0070:3
13085000 T  0071:0
13086000 T  0071:2
                    13082000
13087000 T  0071:2
                    13079000
13088000 T  0071:2
                    13060000
13089000 T  0071:2
13090000 T  0071:3
13091000 T  0072:0
                    13034000
13091500 C  0072:1
13091600 C  0072:1
13092000 T  0072:1
13092010 T  0072:1
13092020 T  0072:1
13092030 T  0072:1
13093000 T  0072:1
13094000 T  0078:2
13095000 T  0080:1
13096000 T  0081:0
13097000 T  0081:2
13098000 T  0083:0
13099000 T  0083:2
13101000 T  0086:1
13102000 T  0089:0
                    13098000
13103000 T  0089:0
13104000 T  0089:3
13105000 T  0090:1
                    13103000
13106000 T  0090:1
13107000 T  0090:1
13108000 T  0093:0
13109000 T  0096:3
13110000 T  0097:1
```

```
                BEGIN
                     QTSPEC;                                                    13111000 T  0098:0
                     GO TO MAINLOOP;                                            13112000 T  0098:2
                END;                                                            13113000 T  0099:2
                                                                                13114000 T  0100:0
                                                                                                13111000
                ABORTMSG;                          % DSED OR QTED                13115000 T  0100:0
                GO TO QUIT;                                                     13116000 T  0100:3
           END;                                                                 13117000 T  0101:1
                                                                                                13109000
           IF GET THEN                        % VALID REC. WRITE IT & CONTINUE   13118000 T  0101:1
           BEGIN                                                                13119000 T  0102:0
GOTIT:                                                                          13119100 T  0102:2
 $ SET OMIT = NOT RJE                                                           13120000 T  0102:2
  IF V EQL 22 AND INREC[17].[18:1] THEN ELSE                          %206-     13127899 C  0102:2
                BEGIN %                                               %750-     13127990 C  0105:0
                P(WAITIO(INREC[17]&(INREC)[CTC]&8[21:42:6],0,V),DEL);           13128000 T  0105:2
                LINECT←*P(DUP) + 1; %                                 %750-     13128010 C  0109:0
                END; %                                                %750-     13128020 C  0111:0
                                                                                                13127990
                GO TO MAINLOOP;                                                 13129000 T  0111:0
           END;                                                                 13130000 T  0111:2
                                                                                                13119000
      END;                                                                      13131000 T  0111:2
                                                                                                13096000
QUIT:                                                                           13132000 T  0111:2
      P(0);                                                                     13133000 T  0111:2
TESTEND:                                                                        13134000 T  0111:3
      T:=P;                              % T=1 IF FIRST GET FAILS, ELSE 0.    13135000 T  0111:3
      IF STARTANEWFILE THEN GO TO START ELSE GO TO RESTART;                     13136000 T  0112:1
END OF PRINTING BACKUP TAPE AND DISK FILES;                                     13137000 T  0114:0
                                                                                                13001000
                                                                                SIZE= 0115 WORDS
```

```
                $ SET OMIT = NOT(DATACOM )                                                    13198999 T  0000:0
                $ SET OMIT = NOT(DATACOM AND BJE )                                            13299999 T  0000:0
               REAL PROCEDURE ANALYSIS;%                                                      14000000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00393
                     BEGIN%                                                                   14001000 T  0000:0
                     REAL ICW,IRCW,INCW,CL,T1,C,T2=SYLLABLE ;%                                14002000 T  0000:0
STACK(F+2) = ICW
STACK(F+3) = IRCW
STACK(F+4) = INCW
STACK(F+5) = CL
STACK(F+6) = T1
STACK(F+7) = C
PRT(307) = T2
                $ SET OMIT = NOT(NEWLOGGING)                                                  14002099 T  0000:0
                     LABEL GETOUT;%                                                           14003000 T  0000:0
               COMMENT  ANALYSIS  EXAMINS THE SYLLABLE WHICH CAUSED THE INTURRUPT AND%        14004000 T  0000:0
                        FROM  THE RELATIVE ADDRESS OF THE SYLLABLE (INCLUDING%                14005000 T  0000:0
                        VARIENT OPERATOR CONSIDERATIONS) COMPUTES THE LOCATION,C,              14006000 T  0000:0
                        OF A COPY OF THE DESCRIPTOR ON THE TOP OF THE STACK.%                 14007000 T  0000:0
                        THE PREVIOUS TWO SYLLABLES ARE FETCHED BY THE STREAM%                 14008000 T  0000:0
                        STATEMENT GETSYLLABLES WHICH ALSO ADJUSTS THE C-L REGIST-              14009000 T  0000:0
                        ERS PROPERLY.%                                                        14010000 T  0000:0
                        FINALLY THE STACK IS ADJUSTED AS FOLLOWS:%                            14011000 T  0000:0
                             DECREASE  S BY 1,IF OPDC OR DESC%                                14012000 T  0000:0
                             XCH A AND B REGISTERS,IF COC OR CDC%                             14013000 T  0000:0
                             OTHERWISE LEAVE THE SAME.                          ;             14014000 T  0000:0
                     CHECKSTACKSPACE;%                                          %WF           14014100 T  0000:0
                                                                                                          14014100
                $ SET OMIT = NOT(NEWLOGGING)                                                  14014199 T  0006:0
                     INCW ← PRT[P1MIX,8];%                                                    14015000 T  0006:0
               IF INCW.[CF]<@1777 THEN   % SOMETHING VERY WRONG                    %602-      14015200 C  0007:2
               BEGIN   JAR[P1MIX,6].[1:1]←1; % SD BIT                              %602-      14015210 C  0008:3
                       FILEMESS(="SEE MCP"," PATCH ",0,0,0,0,602)%KLUGE MSG&DS     %602-      14015220 C  0012:1
               END;                                                                %602-      14015240 C  0014:3
                                                                                                          14015210
               POLISH(.INCW,IOR);%                                                            14016000 T  0015:0
               IRCW ← * INCW ;%                                                               14017000 T  0015:2
               ICW ← *( (NOT 0) INX INCW);%                                                   14018000 T  0016:2
               CL ← ((IRCW INX 0) & IRCW[30:10:2];%                                           14019000 T  0018:1
               STREAM                (T1←0,T2←0,CL:X←0);%                                     14020000 T  0020:2
                    BEGIN%                                                                    14021000 T  0022:1
                    SI←CL; SI←SI-2 ;  CL ← SI; DI ← LOC T2; DI←DI+6;%                          14022000 T  0022:1
                    DS ← 2 CHR;  SI ← SI-3;%                                                  14023000 T  0023:2
                    IF SC = "/" THEN%                                                         14024000 T  0024:0
                         BEGIN%                                                               14025000 T  0024:2
                         SI←SI-1; IF SC ="0" THEN%                                            14026000 T  0024:2
                         BEGIN TALLY←1; T1←TALLY ;CL ← SI  END;%                              14027000 T  0025:1
                                                                                                          14027000
                         END;%                                                                14028000 T  0026:0
                                                                                                          14025000
                    END  GETSYLLABLE ;%                                                       14029000 T  0026:0
                                                                                                          14021000
               POLISH(.CL,←,.T2,←,.T1,←);%                                                    14030000 T  0026:1
               IF INCW.[32:1] THEN%                                                           14031000 T  0027:3
                    BEGIN COMMENT  P-BIT IN CHARACTER MODE ;%                                 14032000 T  0028:2
                    IF T2 = @4441 THEN%                                                       14033000 T  0029:0
                    BEGIN COMMENT ENTER CHARACTER MODE;%                                      14034000 T  0029:3
```

```
                    P(M[(IRCW ← *(NOT 0 INX INCW ← PRT[P1MIX,8] ←%          14035000 T  0030:1
                         (NOT 1 INX INCW)&0[32:1:1])),[18:15]]&%            14036000 T  0031:3
                         1[16:47:1]&0[18:18:15],(NOT 0)INX INCW,←);         14037000 T  0037:1
                    C ← INCW INX 0 -2;%                                     14038000 T  0040:0
               END ELSE BEGIN%                                              14039000 T  0041:3
                                                                                        14034000
          IF MEMORY[ C ← IRCW,[18:15]-T2,[36:6]],[1:3] = 4%                 14040000 T  0046:0
          THEN%                                                             14041000 T  0049:3
          BEGIN%                                                            14042000 T  0050:0
          IF T2.[42:6]= @53 THEN BEGIN%                                     14043000 T  0050:2
COMMENT   CONTROL WORD MEANS CHARACTER MODE RELEASE;%                       14044000 T  0052:1
          T1←PRT[P1MIX,9]←M[(*((NOT 1)INX INCW)),[18:15]],[33:15];%         14045000 T  0052:1
          POLISH(M[T1],0,0);%                                               14046000 T  0057:2
     IF M[T1],[20:1] THEN CONTINUITYBIT;%                                   14047000 T  0059:0
          PROGRAMRELEASE;%                                                  14048000 T  0061:2
          END%                                                              14049000 T  0062:0
                                                                                        14043000
          END;%                                                             14050000 T  0062:0
                                                                                        14042000
          IF T2 = 0 THEN GO TO GETOUT;%                                     14051000 T  0062:0
               END%                                                         14052000 T  0063:1
                                                                                        14039000
          END%                                                              14053000 T  0063:1
                                                                                        14032000
          ELSE%                                                             14054000 T  0063:1
     BEGIN%                                                                 14055000 T  0063:1
     IF T2.[46:1] THEN%                                                     14056000 T  0063:3
          BEGIN%                                                            14057000 T  0064:2
          C ← ICW,[33:15];%                                                 14058000 T  0065:0
          POLISH(ICW, (NOT 1)INX INCW, ←,IRCW,%                             14059000 T  0066:1
          PRT[P1MIX,8]←INCW ← (NOT 0)INX INCW ,←);%                         14060000 T  0068:0
          END    OPDC  DESC  PART%                                          14061000 T  0071:1
                                                                                        14057000
     ELSE%                                                                  14062000 T  0071:1
          BEGIN%                                                            14063000 T  0071:1
          C ← INCW INX 0 -2;%                                               14064000 T  0071:3
          IF (NT1 ← T2 AND @77) = @41 THEN%                                 14065000 T  0073:2
          BEGIN   C ←C-1 ;%                                                 14066000 T  0075:1
          POLISH(MEMORY[C],MEMORY[C+1],[MEMORY[C]], ← ,[MEMORY[C+1]         14067000 T  0077:0
               ],←);%                                                       14068000 T  0081:1
          END COC CDC PART%                                                 14069000 T  0082:0
                                                                                        14066000
          ELSE IF NT1 = @31 THEN%                                           14070000 T  0082:0
               BEGIN COMMENT THIS IS A BRANCH;%                             14071000 T  0083:1
GETOUT:          CL ← P([PRT[P1MIX,1]],DUP,T2,XCH,←) INX @600000;           14072000 T  0083:3
               END BRANCH PART%                                             14073000 T  0086:0
                                                                                        14071000
          ELSE IF NT1 = @35 THEN GO TO GETOUT; COMMENT RETURN;%             14074000 T  0086:3
          END  ALL SYLLABLES BUT OPDC DESC ;%                               14075000 T  0090:1
                                                                                        14063000
     END  WORD MODE INTURRUPT ;%                                            14076000 T  0090:1
                                                                                        14055000
     POLISH(IRCW & CL[33:33:15]&CL[10:30:2],INCW,←) ;%                      14077000 T  0090:1
     ANALYSIS ← C ;%                                                        14078000 T  0092:2
$ SET OMIT = NOT(NEWLOGGING)                                                14078099 T  0093:1
     END   ANALYSIS OF P BIT ;%                                             14079000 T  0093:1
                                                                                        14001000
```

SIZE= 0094 WORDS

```
                SAVE INTEGER PROCEDURE ACTUALOVERLAYADDRESS(TYPE, MIX, LOC);                                    14105000 T  0000:0
                                                                                    START OF SAVE SEGMENT; BASE ADDRESS = 00640
                   VALUE     TYPE, MIX, LOC;                                                                    14106000 T  0000:0
                   INTEGER   TYPE, MIX, LOC;                                                                    14107000 T  0000:0
                   BEGIN INTEGER  T = +1;                                                                       14108000 T  0000:0
STACK(F+1) = T
                $ SET OMIT = NOT(AUXMEM)                                                                        14108999 T  0000:0
                        IF TYPE THEN % CODE...                                                                  14110000 T  0000:0
                        BEGIN                                                                                   14110100 T  0000:2
                $ SET OMIT = NOT(AUXMEM)                                                                        14110999 T  0001:0
                             LOC := LOC INX 0;                                                                  14112000 T  0001:0
                             T := JAR[MIX,LOC DIV (T:=JAR[MIX,8])+10]+LOC MOD T;                                14113000 T  0002:1
                        END ELSE % BETTER BE DATA....                                                           14114000 T  0007:0
                                                                                                                                14110100
                $ SET OMIT = NOT(AUXMEM)                                                                        14114999 T  0007:0
                              T+DALOC[MIX,LOC.[33:6]+P(DUP)-1]+LOC.[39:9]                                       14117000 T  0007:0
                $ SET OMIT = NOT(AUXMEM)                                                                        14117999 T  0010:0
                   END;                                                                                         14119000 T  0010:0
                                                                                                                                14108000
                                                                                                                      SIZE= 0012 WORDS
```

```
$ SET OMIT = NOT(AUXMEM)                                                    14119999 T  0000:0
COMMENT          THE SEGMENT DICTIONARY IS CONSTRUCTED BY THE%              14125000 T  0000:0
                      COMPILERS AND EACH ENTRY HAS THE FORMAT:%             14126000 T  0000:0
                 [ 1: 1]  = 1 FOR TYPE 2 SEGMENTS, =0 OTHERWISE.%           14127000 T  0000:0
                 [ 2: 1]  = 1 FOR INTRINSICS , = 0 OTHERWISE.%              14128000 T  0000:0
                 [ 3: 1]  = 1 IF BEING MADE PRESENT, = 0 OTHERWISE          14128100 T  0000:0
                            (INTERLOCK FOR RE-ENTRANT CODE)                 14128200 T  0000:0
                 [ 4: 2]  = 0 FOR NORMAL SEGMENTS                           14128300 T  0000:0
                          = 3 FOR SEGMENTS OVERLAID TO AUX. MEM.            14128400 T  0000:0
                          = 2 FOR SEGMENTS TO BE OVERLAID TO                14128500 T  0000:0
                            AUXILIARY MEMORY WHICH HAVEN"T BEEN             14128600 T  0000:0
                 [ 6: 1]  = 1 FOR COBOL68 FILE TANK.                        14128700 T  0000:0
                 [ 7: 1]  = 1 FOR COBOL68 READ ONLY ARRAY.                  14128800 T  0000:0
                 [ 8:10]  = LINK TO PRT FOR 1ST DESCRIPTOR FOR%             14129000 T  0000:0
                            THIS SEGMENT.%                                  14130000 T  0000:0
                 [16:15]  = SEGMENT SIZE (<1024) FOR ABSENT                 14131000 T  0000:0
                            SEGMENTS .%                                     14132000 T  0000:0
                            = CORE ADDRESS OF PRESENT SEGMENTS.%            14133000 T  0000:0
                            =  1  FOR NEVER-PRESENT INTRINSICS.%            14134000 T  0000:0
                 [33:15]  = DISK ADDRESS  OF SEGMENT.%                      14135000 T  0000:0
                            = INTRINSIC-NUMBER FOR INTRINSICS.%             14136000 T  0000:0
                 THE  PRT FOR PROGRAM SEGMENTS IS CONSTRUCTED BY THE%       14137000 T  0000:0
                      COMPILERS IN THE FORMAT :%                            14138000 T  0000:0
                 [ 0:5]     = PROGRAM DESCRIPTOR BITS.%                     14139000 T  0000:0
                 [ 6:1]     = STOPPER BIT WHICH DEFINES THE [ 7:11]%        14140000 T  0000:0
                              FIELD.%                                       14141000 T  0000:0
                 [ 7:11]    = LINK TO NEXT DESCRIPTOR THAT BELONGS TO%      14142000 T  0000:0
                              THIS SEGMENT, IF STOPPER FALSE.%              14143000 T  0000:0
                              = SEGMENT NUMBER, IF STOPPER TRUE.%           14144000 T  0000:0
                      [18:15]   = F-REGISTER FIELD USED AT RUN TIME IN%     14145000 T  0000:0
                                LABEL AND ACCIDENTIAL DESCRIPTORS.%         14146000 T  0000:0
                                = SEGMENT NUMBER FOR WORD MODE AND%         14147000 T  0000:0
                                CHARACTER MODE DESCRIPTORS.%                14148000 T  0000:0
                      [33:15]   = CORE ADDRESS FOR PRESENT SEGMENTS.%       14149000 T  0000:0
                                = RELATIVE ADDRESS FOR ABSENT SEGMENTS.%    14150000 T  0000:0
                                I.E. RELATIVE TO BEGINNING OF SEGMENT.%     14151000 T  0000:0
                      EACH PRT  (R+4) CONTAINS A DESCRIPTOR WHICH POINTS%   14152000 T  0000:0
                           TO THE SEGMENT DICTIONARY.%                      14153000 T  0000:0
                 ;%                                                         14154000 T  0000:0
            PROCEDURE MAKEPRESENT(C); VALUE C; REAL C;%                     14155000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00397
                 BEGIN%                                                     14156000 T  0000:0
                 REAL SAVEBIT, MINE;%                                       14157000 T  0000:0
STACK(F+1) = SAVEBIT
STACK(F+2) = MINE
                 REAL   D,MOTHER,MOM,LOC,SIZE;%                             14158000 T  0000:0
STACK(F+3) = D
STACK(F+4) = MOTHER
STACK(F+5) = MOM
STACK(F+6) = LOC
STACK(F+7) = SIZE
                 INTEGER DISKADDR = SAVEBIT;%                               14159000 T  0000:0
STACK(F+1) = DISKADDR
                 DEFINE LINK= [ 7:11]#,STOPPER=[ 6: 1]#,PROGRAMDESC=[5:1]#;%14160000 T  0000:0
                 DEFINE NOTOPEN =[25:1] #;%                                 14161000 T  0000:0
                 ARRAY NAME  DD ;%                                          14162000 T  0000:0
STACK(F+10) = DD
```

```
                    ARRAY AIT[*];                                                    14162500 T  0000:0
STACK(F+11) = AIT
                    ARRAY PRTR[*]  ;%                                                14163000 T  0000:0
STACK(F+12) = PRTR
                    REAL SEGNO=MOTHER, X=MOM,IOD ;%                                  14164000 T  0000:0
STACK(F+4) = SEGNO
STACK(F+5) = X
STACK(F+13) = IOD
                    REAL SPACE;%   SPACE FOR SEGMENT NUMBERS  (INTRINSICS) BY MIX    14164100 T  0000:0
STACK(F+14) = SPACE
                    REAL MES,SAGE,GM;            % SPACE FOR NO MEM MESSAGE.         14164200 T  0000:0
STACK(F+15) = MES
STACK(F+16) = SAGE
STACK(F+17) = GM
                     REAL I,J;                                          %101-        14164300 C  0000:0
STACK(F+20) = I
STACK(F+21) = J
          $ SET OMIT = NOT(NEWLOGGING)                                               14164399 T  0000:0
                    LABEL EXIT; % ALL AVENUES MUST LEAD TO HERE                      14164500 T  0000:0
                    LABEL WRAP,AROUND,TESTREADY;%                                    14165000 T  0000:0
                    LABEL OPEN,CLOSE;%                                               14166000 T  0000:0
                    LABEL CODEIN,INT;                                                14166100 T  0000:0
                    LABEL DLOOP, NG;                                                 14166200 T  0000:0
                    DEFINE  REVERSE =[22:1]#,READY  =[19:1]#,PRESENT  =[2:1]#;%      14167000 T  0000:0
               COMMENT MAKEPRESENT HAS THE FOLLOWING ACTIONS,DEPENDING ON THE TYPE%   14168000 T  0000:0
                         OF DESCRIPTOR CAUSING PRESENCE BIT :%                       14169000 T  0000:0
                         DATA DESCRIPTOR :%                                          14170000 T  0000:0
                              IF MOTHER ABSENT THEN GET CORE SPACE AND SET%          14171000 T  0000:0
                                   MOTHER PRESENT WITH PROPER CORE ADDRESS%          14172000 T  0000:0
                                   THEN IF INITIAL ACCESS,ZERO THE SPACE ELSE%       14173000 T  0000:0
                                   READ IN FROM DISK AND RETURN DISK SPACE%          14174000 T  0000:0
                                   THEN SET 1ST MEMORY LINK TO SAVE OR NOT SAVE%     14175000 T  0000:0
                                   AND SET 2ND LINK TO ADDRESS OF MOTHER%            14176000 T  0000:0
                              IN ANY EVENT, SET COPY PRESENT WITH CORRECT CORE%       14177000 T  0000:0
                                   ADDRESS.%                                         14178000 T  0000:0
                         IO  DESCRIPTOR:%                                            14179000 T  0000:0
                         PROGRAM DESCRIPTOR:%                                        14180000 T  0000:0
                         ;%                                                          14181000 T  0000:0
          SUBROUTINE RUNAROUND;%                                                     14182000 T  0000:0
          BEGIN WHILE NOT (PRTR[X] ← ((LOC+2) INX PRTR[X])%                          14183000 T  0001:0
               OR MEMORY),STOPPER DO X ← PRTR[X].LINK;%                              14184000 T  0003:0
          END RUNAROUND;%                                                            14185000 T  0007:1
                                                                                                 14183000
%                                                                                    14185100 T  0007:2
 $ SET OMIT = NOT(NEWLOGGING)                                                        14185199 T  0007:2
          IF (D ← M[C]).[1:1] THEN%                                                  14186000 T  0007:2
          IF D.[6:2]=1 THEN % TYPE 13 INTRINSIC                                      14186010 T  0014:1
          BEGIN X:=[INTRNSC[SEGNO←MINE←NFLAG(D) INX 0]];                             14186020 T  0016:0
               SEGNO:=SEGNO-1;                                                       14186030 T  0019:1
               STREAM(T:=SEGNO AND 3, I:=[INTABLE[P1MIX,SEGNO DIV 4]]);              14186100 T  0020:2
               BEGIN DI:=DI+T;DI:=DI+T;SKIP 1 DB;DS:=SET;END;%MARK TYPE 13 BIT       14186110 T  0023:1
                                                                                                 14186110
               IF X>0 THEN SLEEP([X],-0);                                            14186120 T  0025:0
 $ SET OMIT = NOT MONITOR                                                            14186121 T  0028:0
               IF (X INX 0)≤1023 THEN                                                14186130 T  0028:0
               BEGIN P(ABS(X),[X],←); SIZE←X INX 0;                                  14186140 T  0029:1
 $ SET OMIT = NOT(AUXMEM)                                                            14186143 T  0032:0
```

```
                                DISKADDR := X.[6:27];                                                  14186148 T  0032:0
                                MINE←MINE&SIZE[8:38:10]&3[1:46:2];                                     14186150 T  0033:1
                                IOD:=13; GO TO CODEIN;                                                 14186152 T  0036:0
                            END ELSE BEGIN M[C].[CF]←INTRNSC[MINE].[CF];                               14186160 T  0037:1
                                                                                                                    14186140
                                M[C].[2:1]:=1;                                                         14186170 T  0040:3
                                GO EXIT;                                                               14186180 T  0043:2
                                END                                                                    14186190 T  0044:0
                                                                                                                    14186160
                        END ELSE                                                                       14186200 T  0044:0
                                                                                                                    14186020
                        BEGIN PRTR ← PRT[P1MIX,*];  LOC ← NFLAG(D)&0[5:5:1];                           14187000 T  0044:0
                            DO IF LOC.PROGRAMDESC THEN SEGNO ← LOC.[18:15]%                            14188000 T  0047:2
                                ELSE IF LOC.STOPPER THEN SEGNO ← LOC.LINK%                             14189000 T  0048:3
                                ELSE LOC ← NFLAG(PRTR[LOC.LINK])%                                      14190000 T  0051:3
                            UNTIL SEGNO≠0;%                                                            14191000 T  0054:2
                            DD ← SEGNO INX PRTR[4];%                                                   14192000 T  0056:2
                             IF DD[0].[3:1] AND NOTERMSET(P1MIX) THEN                                  14193000 T  0058:0
                               COMPLEXSLEEP((TERMSET(P1MIX) OR NOT DD[0].[3:1]));                      14193100 T  0060:2
12900000    ACCIDENTAL ENTRY AT 1
                             IF TERMSET(P1MIX) THEN GO INITIATE;                                       14193200 T  0068:3
                            IF (SIZE ← (MINE ← DD[0]).[18:15])≤1023 THEN%                              14194000 T  0071:1
                            BEGIN DD[0].[3:1] ← 1;%                                                    14195000 T  0073:3
                                IF MINE<0 THEN%                                                        14196000 T  0076:0
                                  IF PRTR[X ← MINE.[8:10]].[2:1] THEN GO AROUND;%                      14197000 T  0076:3
                                IF MINE.[2:1] THEN%                                                    14198000 T  0080:0
                                BEGIN X ← [INTRNSC[MINE INX 0]];%                                      14198100 T  0080:3
                                    IF X>0 THEN SLEEP([X],-0);%                                        14198200 T  0082:3
                                    IF (X INX 0)≤1023 THEN BEGIN P(ABS(X),[X],←);%                     14198300 T  0085:3
                                    SIZE ← X INX 0;                                                    14198400 T  0088:2
$ SET OMIT = NOT MONITOR
$ SET OMIT = NOT(AUXMEM)                                                                               14198410 T  0089:3
                                                                                                       14198499 T  0089:3
                                    DISKADDR ← X.[6:27];                                               14198700 T  0089:3
                                END ELSE BEGIN LOC ← (SIZE ← X INX 0)-2;                               14198800 T  0091:0
                                                                                                                    14198300
                                    DD[0].[FF] ← SIZE;  GO AROUND;%                                    14199000 T  0093:3
                                END;%                                                                  14200000 T  0095:2
                                                                                                                    14198800
                            END ELSE IF JAR[P1MIX,10]=0 THEN%                                          14201000 T  0095:2
                                                                                                                    14198100
                              DISKADDR := DATADDRESS(P1MIX, MINE)                                      14202000 T  0097:2
                            ELSE DISKADDR := CODEADDRESS(P1MIX, MINE);                                 14203000 T  0098:0
                            IOD:=6×MINE.[2:1]+(MINE LSS 0)+1;                                          14203010 T  0102:0
CODEIN::    WHILE (LOC←GETSPACE(SIZE,IOD,(MINE<0 AND MINE.[6:1])+66))                                  14203020 T  0105:1
                    = 0 DO                                                                             14203021 T  0109:0
                            BEGIN IF TERMSET(P1MIX) THEN                                               14203100 T  0110:3
                                BEGIN IF MINE.[2:1] THEN                                               14203200 T  0112:1
                                        INTRNSC[MINE]:=NABS(*P(DUP));                                  14203300 T  0113:2
                                    IF D.[6:2]=1 THEN                                                  14203400 T  0115:3
                                        INTRNSC[D]:=NABS(*P(DUP));                                     14203500 T  0117:0
                                    DD[0].[3:1]:=0; GO TO INITIATE;                                    14203600 T  0119:1
                                END;                                                                   14203700 T  0121:2
                                                                                                                    14203200
                            IF(SPACE:=SPACE+1)=5 THEN                                                  14204000 T  0121:2
                            BEGIN STREAM(P1MIX,SIZE,T:=[MES]);                                         14204100 T  0123:1
                                BEGIN SI:=LOC P1MIX; DS:=2 DEC;                                        14204200 T  0125:0
                                    DS:=8LIT" NO MEM ";DS:=5 DEC;                                      14204300 T  0125:2
```

```
                              DS:=5 LIT " WDS←";                                  14204400 T  0127:0
                          END;                                                    14204500 T  0128:0
                                                                                              14204200
                          P(WAITIO([MES],@177,25),DEL);                           14204600 T  0128:1
                      END;                                                        14204700 T  0129:3
                                                                                              14204100
                      SLEEP([CLOCK],NOT CLOCK);                                   14205000 T  0129:3
                  END;                                                            14205100 T  0131:2
                                                                                              14203100
                  IF MES NEQ 0 THEN                                               14205200 T  0132:0
                  BEGIN STREAM(T:=[MES]);                                         14205300 T  0132:3
                        BEGIN DI:=DI+3;DS:=7LIT"OK MEM←" END;                     14205400 T  0134:0
                                                                                              14205400
                        P(WAITIO([MES],@177,25),DEL);                             14205500 T  0135:3
                  END;                                                            14205600 T  0137:1
                                                                                              14205300
                  DISKIO(IOD, -LOC-1, SIZE, DISKADDR);  X ← MINE.[8:10];%         14206000 T  0137:1
              SLEEP([IOD],IOMASK);                                                14206100 T  0140:3
              IF IOD.[26:7] NEQ 0 THEN                                            14206110 T  0142:1
                 BEGIN                                                            14206120 T  0143:2
                 IF MINE.[2:1] THEN INTRNSC[MINE]:=NABS(*P(DUP));                 14206135 T  0144:0
                 DD[0].[3:1] := 0;                                                14206140 T  0147:0
                 GO TO NG;                                                        14206145 T  0148:3
                 END;                                                             14206160 T  0149:1
                                                                                              14206120
$ SET OMIT = NOT(STATISTICS)                                                      14206299 T  0149:1
                  IF D.[6:2]=1 THEN                                               14206310 T  0149:1
                  BEGIN M[C].[CF]←LOC+2;                                          14206320 T  0150:2
                        M[C].[2:1]←1;                                             14206330 T  0153:3
                  GO TO INT;                                                      14206340 T  0156:2
                  END;                                                            14206350 T  0157:0
                                                                                              14206320
                IF MINE>0 THEN BEGIN RUNAROUND;%                                  14207000 T  0157:0
                     M[C] ← ((LOC+2) INX D) OR MEMORY;%                           14208000 T  0159:0
INT:                                                                              14208010 T  0162:0
                     IF MINE.[2:1] THEN%                                          14209100 T  0162:0
                     BEGIN M[LOC] ← (*P(DUP))&0[9:9:6];%                          14209200 T  0162:3
                          INTRNSC[MINE INX 0] ← -(*P(DUP))&(LOC+2)[CTC];%         14209300 T  0166:0
                     END ELSE%                                                    14209500 T  0169:1
                                                                                              14209200
                     IF (X ← PRTR[4].[18:6])≠0 THEN%                              14210000 T  0169:1
                       M[LOC] ← (*P(DUP))&X[9:42:6];%                             14211000 T  0171:3
                     IF DISKADDR>0 THEN M[LOC+1] := 0 & SIZE[CTF];                14212000 T  0175:0
                     M[LOC+1] := (*P(DUP)) & SEGNO[CTC];                          14212010 T  0178:3
                IF MINE.[2:1] THEN M[LOC+1] ← (*P(DUP))&MINE[8:38:10];%           14212100 T  0181:2
                IF D.[6:2]=1 THEN                                                 14212200 T  0186:0
                BEGIN M[LOC].[2:1]←0; GO EXIT;                                    14212300 T  0187:1
                END;                                                              14212400 T  0191:0
                                                                                              14212300
                     DD[0].[18:15] ← LOC+2;%                                      14213000 T  0191:0
                END PROGRAM CODE SEGMENTS%                                        14214000 T  0192:3
                                                                                              14207000
              ELSE BEGIN                                                          14215000 T  0192:3
                     M[C] ← PRTR[X] ← M OR ((LOC+2)%                              14216000 T  0193:1
                          &(M[LOC+1] ← [PRTR[X]] INX 0)[18:33:15]%                14217000 T  0195:2
                          & (MINE.[7:1]×24) [3:43:5] % COBOL68 READ ONLY          14217500 T  0198:1
                          &SIZE[8:38:10]);%                                       14218000 T  0199:3
```

```
                    IF MINE.[6:1] THEN     % COBOL68 FILE TANK                          14218010 T  0202:3
                       IF NOT P(M[LOC+4],TOP,XCH,DEL) THEN% BUILD FIB PTR              14218025 T  0203:2
                       BEGIN                                                           14218027 T  0206:2
                          P([M[LOC+4]],DUP,DUP,LOD,XCH,INX,M[C],FFX,                   14218030 T  0207:0
                          @100026,DIA 32,DIB 2,TRB 16,XCH,+);                          14218035 T  0210:3
                       WHILE (AIT+PRTR[AITNDX]),PBIT=0                                 14218040 T  0212:1
                         DO MAKEPRESENT([PRTR[AITNDX]] INX 0);                         14218045 T  0213:3
                       IF AIT.[8:10] < AIT[0]+2 THEN                                   14218050 T  0218:0
                         BEGIN  P(AIT,0,0); INTERRUPT(1);% PHONEY INVALID              14218055 T  0220:1
                                P(DEL,DEL,DEL);          % INDEX ON AIT               14218060 T  0222:2
                                AIT + PRTR[AITNDX];                                    14218065 T  0223:1
                         END;                                                          14218070 T  0224:1
                                                                                                   14218055
                       IF AIT[AIT[0]].[8:10] NEQ 1 THEN                  %101-       14218072 C  0224:1
                          BEGIN                                          %101-       14218074 C  0226:0
                               I := 1;                                   %101-       14218076 C  0226:2
                               WHILE AIT[I].[8:10] = 1 DO I := I + 1;%101-           14218078 C  0227:1
                               FOR J := AIT[0] STEP -1 UNTIL I DO        %101-       14218080 P  0231:0
                                    AIT[J+1] := AIT[J];                  %101-       14218082 C  0235:0
                         END ELSE I := AIT[0] + 1;                       %101-       14218084 C  0237:2
                                                                                                   14218074
                       AIT[0] := *P(DUP) + 1;                            %101-       14218086 C  0239:2
                       AIT[I] := -(1 & 1[8:38:10] & M[C][FTF]);          %101-       14218088 C  0241:2
                        END;                                                           14218090 T  0245:1
                                                                                                   14218027
$ SET OMIT = NOT(STATISTICS)                                                           14218099 T  0245:1
                    END TYPE TWO DATA SEGMENTS;%                                       14219000 T  0245:1
                                                                                                   14215000
                    IF NOT MINE.[6:1] THEN M[LOC].[2:1] + 0;                           14220000 T  0245:1
               END ABSENT SEGMENTS%                                                    14221000 T  0249:2
                                                                                                   14195000
               ELSE BEGIN LOC + SIZE*2;%                                               14222000 T  0249:2
          AROUND:   IF DD[0]>0 THEN%                                                   14223000 T  0251:1
                      IF NOT PRTR[X + DD[0].[8:10]].[2:1] THEN RUNAROUND;%             14224000 T  0252:0
                    M[C] + IF DD[0]>0 THEN ((SIZE INX D) OR M)%                        14225000 T  0256:0
                         ELSE PRTR[DD[0].[8:10]];%                                     14226000 T  0259:1
               END;%                                                                   14227000 T  0261:1
                                                                                                   14222000
               IF DD[0].[2:1] THEN%                                                    14227100 T  0261:1
               BEGIN % INTRINSIC                                                       14227200 T  0262:0
               IF (SIZE:=(DD[0] INX 0)-1) NEQ 16 THEN %NOT INTRINSIC 17                14227210 T  0262:2
                  BEGIN                                                                14227220 T  0264:3
                    STREAM(SEGNO, T + SIZE AND 3,%                                     14227300 T  0265:1
                           I + [INTABLE[P1MIX,SIZE DIV 4]]);%                          14227400 T  0266:2
                    BEGIN                                                              14227500 T  0268:1
                         SI:=I; SI:=SI+T; SI:=SI+T; SKIP 1 SB;                         14227520 T  0268:1
                         IF SB THEN; % REMEMBER TYPE 13 REFERENCE                      14227540 T  0269:3
                         DI:=DI+T; DI:=DI+T; T:=DI; SI:=LOC T;                         14227560 T  0270:1
                         SI:=SI-2; DS:=2 CHR;                                          14227580 T  0271:3
                         IF TOGGLE THEN BEGIN DI:=T; SKIP 1 DB; DS:=SET; END;          14227600 T  0272:1
                                                                                                   14227600
                    END;                                                               14227620 T  0273:1
                                                                                                   14227500
                  END;                                                                 14227630 T  0273:2
                                                                                                   14227220
               END;%                                                                   14227700 T  0273:2
                                                                                                   14227200
```

```
        DD[0],[3:1] ← 0; GO EXIT;                                                14228000 T  0273:2
    END;%                                                                        14229000 T  0275:3
                                                                                             14187000
        IF (MOM:=D.[3:5])≠0 AND (MOM AND @33)≠@30 THEN                           14230000 T  0276:0
            BEGIN%                                                               14231000 T  0279:1
COMMENT I/O DESCRIPTOR;%                                                         14232000 T  0279:3
            IF JAR[P1MIX,2] < 0 THEN                                             14233000 T  0279:3
                BEGIN TERMINATE(P1MIX);                                          14233100 T  0281:1
                    TERMINALMESSAGE(25);                                         14233200 T  0282:2
                END;                                                             14233300 T  0283:1
                                                                                             14233100
            MOM← MEMORY[D  INX  (IF D.REVERSE THEN 2 ELSE NOT 1)]%               14234000 T  0283:1
                    INX  0;%                                                     14235000 T  0286:1
TESTREADY:  IF NOT MEMORY[MOM].READY THEN%                                       14236000 T  0288:0
                    SLEEP([MEMORY[MOM]],IOMASK);%                                14237000 T  0289:3
            IF MEMORY[MOM].PRESENT THEN%                                         14238000 T  0292:1
                    MEMORY[C]←MEMORY[MOM]%                                       14239000 T  0293:3
            ELSE%                                                                14240000 T  0295:1
            BEGIN%                                                               14241000 T  0296:2
            IF MEMORY[MOM].NOTOPEN THEN%                                         14242000 T  0297:0
OPEN:       BEGIN SAVEOPEN(MOM); IF TERMSET(P1MIX) THEN GO EXIT;                 14243000 T  0298:2
                    GO TESTREADY END                                             14244000 T  0301:3
                                                                                             14243000
            ELSE BEGIN%                                                          14245000 T  0302:1
COMMENT READY AND NOT PRESENT INDICATES REEL-SWITCH OR TERMINATE;%               14246000 T  0302:3
                PRTR←M[MOM-3];%                                                  14247000 T  0302:3
                LOC←PRTR[15].[25:5];%                                            14248000 T  0304:3
                SIZE←PRTR[4].[8:4];%                                             14249000 T  0306:1
                IF M[MOM].[27:1] THEN%                                           14250000 T  0307:3
                IF M[MOM].[24:1] THEN%                                           14251000 T  0309:1
BEGIN IF SIZE=2 AND NOT PRTR[4].[2:1]%                                           14252000 T  0311:1
                AND NOT M[MOM].[22:1] THEN%                                      14253000 T  0312:3
            BEGIN BLASTQ(LOC);%                                                  14254000 T  0316:0
                P(WAITIO(M[MOM-2],0,LOC),DEL);%                                  14255000 T  0317:1
                P(WAITIO(@1000000340000005,0,LOC),DEL);%                         14256000 T  0320:0
                IF M[M[MOM-2] INX 4].[42:6]=1 THEN%                              14257000 T  0321:2
CLOSE:          BEGIN LOC←PRTR[13].[28:10];%                                     14258000 T  0325:1
                    FILECLOSE(MOM&@12[18:33:15]);%                               14259000 T  0327:1
                    PRTR[13].[28:10]←LOC+1;%                                     14260000 T  0328:2
                    GO TO OPEN;%                                                 14261000 T  0331:2
                END;%                                                            14262000 T  0333:0
                                                                                             14258000
            END;%                                                                14263000 T  0333:0
                                                                                             14254000
END ELSE%                                                                        14264000 T  0333:0
                                                                                             14252000
BEGIN IF SIZE=2 OR SIZE=7 OR SIZE=8 THEN%                                        14265000 T  0333:0
            BEGIN IF NOT PRTR[4].[2:1] THEN%                                     14266000 T  0336:1
                    M[M[MOM-2] INX 4].[42:6]←1;%                                 14267000 T  0338:0
                GO TO CLOSE;%                                                    14268000 T  0343:0
            END;%                                                                14269000 T  0343:2
                                                                                             14266000
END;%                                                                            14270000 T  0343:2
                                                                                             14265000
P(MOM,M[MOM],[27:1]+1,0,0);%                                                     14271000 T  0343:2
COM11;%                                                                          14272000 T  0346:1
END;%                                                                            14273000 T  0346:3
                                                                                             14245000
```

```
                        END;%                                                                    14274000 T  0346:3
                                                                                                                14241000
                        END%                                                                     14275000 T  0346:3
                                                                                                                14231000
                    ELSE%                                                                        14276000 T  0346:3
                        BEGIN%                                                                   14277000 T  0346:3
                COMMENT  DATA DESCRIPTOR;%                                                       14278000 T  0347:1
                DLOOP:                                                                           14278100 T  0347:1
                    IF   (MOTHER←MEMORY[MOM ← D.[18:15]]).[2:1] THEN GO WRAP;%                   14279000 T  0347:1
                  IF (MOTHER INX 0) = 6 THEN % I/O ERROR FROM OLAY                               14279150 T  0351:0
                     BEGIN                                                                       14279200 T  0352:1
                     TERMINATE(P1MIX & 20[CTF]);                                                 14279250 T  0352:3
                     GO TO INITIATE;                                                             14279350 T  0354:0
                     END;                                                                        14279400 T  0354:2
                                                                                                                14279200
                    IF (MOTHER INX 0) = 5 THEN % INTERLOCK FROM OLAY                             14279450 T  0354:2
                     BEGIN                                                                       14279500 T  0355:3
                     COMPLEXSLEEP(((M[MOM] INX 0) NEQ 5));                                       14279550 T  0356:1
14193100    ACCIDENTAL ENTRY AT 5
                     GO TO DLOOP;                                                                14279600 T  0363:0
                     END;                                                                        14279650 T  0363:2
                                                                                                                14279500
                    SAVEBIT ← MOTHER.[CF]=1;                                                     14280000 T  0363:2
                    MEMORY[MOM] ← MOTHER←((LOC ←GETSPACE(SIZE←MOTHER.[8:10],2,%                  14281000 T  0365:1
                          SAVEBIT+64))+2)[CTC]&1[2:47:1];                                        14282000 T  0368:0
                 $ SET OMIT = NOT(AUXMEM)                                                        14282099 T  0371:3
                    IF MOTHER.[CF]≤3 THEN                                                        14283000 T  0371:3
                        STREAM(L←LOC+2, S←SIZE-1, T←0, W←(MOTHER.[CF]=2));                       14284000 T  0373:0
                            BEGIN  SI ← LOC S;SI←SI+6;DI←LOC T;DI←DI+7;DS←CHR;%                   14285000 T  0377:0
                            DI←L;  SI←LOC W;  DS←WDS;                                            14286000 T  0378:1
                            SI←L; T(DS←32 WDS; DS←32 WDS); DS←S WDS;%                            14287000 T  0379:0
                            END  ZERO SPACE%                                                     14288000 T  0381:0
                                                                                                                14285000
                    ELSE%                                                                        14289000 T  0381:0
                        BEGIN%                                                                   14290000 T  0381:1
                COMMENT READ ARRAY FROM DISK AND RETURN DISK SPACE;%                             14291000 T  0381:3
                 $ SET OMIT = NOT(STATISTICS)                                                    14291099 T  0381:3
                        DISKIO(IOD,-LOC-1,MOTHER.[8:10],%                                        14292000 T  0381:3
                                    DATADDRESS(P1MIX, MOTHER));                                  14292100 T  0384:0
                    SLEEP([IOD],IOMASK);                                                         14292110 T  0385:2
                    IF IOD.[26:7] NEQ 0 THEN                                                     14292120 T  0387:0
                        BEGIN                                                                    14292130 T  0388:1
                NG:     FORGETSPACE(LOC+2);                                                      14292140 T  0388:3
                        COMPLEXSLEEP(TERMSET(P1MIX));                                            14292150 T  0390:0
14279550    ACCIDENTAL ENTRY AT 1
                        GO TO INITIATE;                                                          14292160 T  0396:2
                        END;                                                                     14292170 T  0397:0
                                                                                                                14292130
                 $ SET OMIT = NOT(STATISTICS)                                                    14292199 T  0397:0
                          MOM←MOM&MOTHER[CTF];                                                   14293000 T  0397:0
                        END ;%                                                                   14295000 T  0398:1
                                                                                                                14290000
                    MEMORY[LOC].[2:1] ←   SAVEBIT;%                                              14296000 T  0398:1
                    MEMORY[LOC+1] ← MOM ;%                                                       14297000 T  0401:0
                 $ SET OMIT = NOT(STATISTICS)                                                    14297099 T  0403:0
                WRAP:%                                                                           14298000 T  0403:0
                    MEMORY[C] ← IF D.[8:10] = 0 THEN P(M[MOM],0,CDC,D,XCH,INX)%                  14299000 T  0403:0
```

```
                    ELSE   MEMORY[MOM];%
                END;%

EXIT:
 $ SET OMIT = NOT(NEWLOGGING)
          END  MAKEPRESENT ;%
```

```
14300000 T   0407:3
14301000 T   0409:3
                    14277000
14301100 T   0409:3
14301199 T   0409:3
14302000 T   0409:3
                    14156000
          SIZE= 0411 WORDS
```

```
                    REAL ADDRS=NT1;%                                                                    14342000 T  0000:0
PRT(160) = ADDRS
                  PROCEDURE ZIPPER(A,B,C);VALUE A,B,C; REAL A,B,C; FORWARD;                             14342100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00411
PRT(622) = ZIPPER
                  PROCEDURE COM5;%                                                                      14343000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00411
                     BEGIN%                                                                             14344000 T  0000:0
                          REAL RCW=+0,%                                                                 14345000 T  0000:0
STACK(F+0) = RCW
                               ERTOG=+2,%                                                               14346000 T  0000:0
STACK(F+2) = ERTOG
                               I    =+3,%                                                               14347000 T  0000:0
STACK(F+3) = I
                               T    =+4;%                                                               14348000 T  0000:0
STACK(F+4) = T
                          INTEGER J=I;%                                                                 14349000 T  0000:0
STACK(F+3) = J
                          ARRAY VECTOR=+5[*],S=+6[*];%                                                  14350000 T  0000:0
STACK(F+5) = VECTOR
STACK(F+6) = S
                          INTEGER Q=S;                                                                  14350100 T  0000:0
STACK(F+6) = Q
                          ARRAY FILEBLOCK=+7[*];%                                                       14351000 T  0000:0
STACK(F+7) = FILEBLOCK
                          ARRAY TSKA=+13[*];                                                            14351050 T  0000:0
STACK(F+15) = TSKA
                          INTEGER LINK; LABEL RETURNFM;                                                 14351100 T  0000:0
STACK(F+1) = LINK
                          INTEGER MOTHER=+8, NEXTMOM=+9, MOMMIX=+10, CATCH=+11;%                        14351200 T  0000:0
STACK(F+10) = MOTHER
STACK(F+11) = NEXTMOM
STACK(F+12) = MOMMIX
STACK(F+13) = CATCH
                          REAL ENDAIT=MOMMIX,A=MOMMIX,K=NEXTMOM;                                        14351205 T  0000:0
STACK(F+12) = ENDAIT
STACK(F+12) = A
STACK(F+11) = K
                          REAL CHAIN=+12,ABSEVT=CHAIN;                                                  14351210 T  0000:0
STACK(F+14) = CHAIN
STACK(F+14) = ABSEVT
                          REAL MSCW = -1;                                                               14351220 T  0000:0
STACK(F-1) = MSCW
                          REAL JAR9 = TSKA+1;                                    %519-                  14351230 P  0000:0
STACK(F+16) = JAR9
                    $ SET OMIT = NOT(WORKSET)                                                           14351240 T  0000:0
                      REAL STOPMIX=JAR9+1; LABEL STOPLOOP;                                              14351250 T  0000:0
STACK(F+17) = STOPMIX
                    $ POP OMIT % WORKSET                                                                14351260 T  0000:0
                    SUBROUTINE DELINKIT;                                                                14351300 T  0000:0
                    BEGIN T:=M[I] INX 0;                                                                14351310 T  0001:0
                          IF NOT M[T].[4:1] THEN SLEEP([M[T]],@2000000000000000);                       14351320 T  0003:0
                          M[T].[4:1]:=0;                                                                14351330 T  0007:1
                          IF M[I].[2:1] THEN%IN CONTROL                                                 14351340 T  0010:0
                          BEGIN M[T].[CF]:=M[I].[FF];                                                   14351350 T  0011:2
                                IF (M[T] INX 0) NEQ 0 THEN M[M[T] INX 0].[2:1]:=1                       14351360 T  0015:2
                                 ELSE M[T]:=ABS(M[T]);%UNLOCK IT                                        14351370 T  0020:0
```

```
      END ELSE% IN WAIT QUEUE                                                    14351380 T  0026:2
                                                                                           14351350
      BEGIN T:=M[T] INX 0;                                                       14351390 T  0026:2
            WHILE M[T].[FF] NEQ (T INX 0) DO                                     14351400 T  0029:0
             T:=M[T].[FF];                                                       14351410 T  0032:0
            M[T].[FF]:=M[T].[FF];                                                14351420 T  0034:2
      END;                                                                       14351430 T  0038:0
                                                                                           14351390
M[T].[4:1]:=1;                                                                   14351440 T  0038:0
END;                                                                             14351450 T  0040:3
                                                                                           14351310
            PRYOR[PIMIX] ← -1;                                                   14351500 T  0041:0
        P((ADDRS:=GETSPACE(196,12,0))+1,STS,,COM5,RCW,0,RDS,0,XCH,CFX,           14353000 T  0042:3
           STF);                                                                 14353002 T  0047:2
        P(P&[MSCW][CTF],0,0,0,0,0,0);                                            14354000 T  0048:0
        P(0,0,0,0,0,0,0); % ZERO FILEBLOCK THRU JAR9...          %172-           14355000 P  0050:0
$ SET OMIT = NOT(WORKSET)                                                        14355020 T  0051:3
        P(0); % STOPMIX                                                          14355030 T  0051:3
$ POP OMIT % WORKSET                                                             14355040 T  0052:0
        M[(FILEBLOCK+PRT[PIMIX,3]) INX 0-2].[9:6] ← 0;%                          14356000 T  0052:0
        M[ADDRS]←(*P(DUP))&0[9:9:6];                                             14357000 T  0057:0
        M[(VECTOR+JARROW[PIMIX]) INX 0-2]←(*P(DUP))&0[9:9:6];                    14358000 T  0059:3
             IF VECTOR[0]<0 THEN%                                                14358100 T  0064:1
                  BEGIN CATCH←PRT[PIMIX,@26];                                    14358150 T  0065:1
                   ERTOG ← (VECTOR[1]<0) OR (PRT[PIMIX,@25]≠0);%                 14358200 T  0067:1
                  END;                                                           14358300 T  0070:2
                                                                                           14358150
   IF VECTOR[2].[6:1] THEN   % IPC                                               14358310 T  0070:2
   BEGIN IF VECTOR[1]<0 THEN % DS-ED TASK                                        14358315 T  0071:2
   BEGIN     WHILE (S←PRT[PIMIX,AITNDX]).PBIT=0 DO   % SEARCH AIT FOR            14358320 T  0073:0
              MAKEPRESENT( PRTROW[PIMIX]  INX AITNDX); % TASK ARRAYS            14358325 P  0076:2
             MEMORY[S INX NOT 1].[2:1] ← 1;              % MARK SAVE             14358330 T  0078:2
             ENDAIT ← S[0];                                                      14358335 T  0082:1
             FOR K←1 STEP 1 UNTIL ENDAIT DO                                      14358340 T  0083:1
        BEGIN     TSKA ← MEMORY[(NT1←S[K]).MOM];                                 14358345 T  0084:0
                  IF NT1.[1:2]=3 THEN IF              % DEPENDENT TASK            14358355 T  0087:0
                  ((NT2←TSKA[3])=1 OR (NT2=2 AND TSKA[4]≠PIMIX)) THEN            14358360 T  0088:3
                       % TASK ARRAY OF A SCHEDULED OR RUNNING OFFSPRING          14358365 T  0092:2
                       BEGIN IF NT2=1 THEN                                       14358370 T  0092:2
                            BEGIN                                                14358373 T  0093:3
                                 SHEETDIDDLER(0,20,TSKA[4]);       % ES        14358375 T  0094:1
                            END;                                                 14358377 T  0095:3
                                                                                           14358373
                              IF TSKA[3]=2 THEN              % RUNNING          14358380 T  0095:3
                            BEGIN                                                14358382 T  0096:3
                                 TERMINATE(TSKA[4]&86[CTF]); HALT; % DS          14358383 T  0097:1
                                 NOPROCESSTOG ← NOPROCESSTOG-1;                  14358384 T  0099:1
                            END;                                                 14358385 T  0100:2
                                                                                           14358382
                            COMPLEXSLEEP((TSKA[3] LSS 0));                       14358386 T  0100:2
14292150    ACCIDENTAL ENTRY AT 0
                       END;                                                      14358389 T  0106:0
                                                                                           14358370
        END;                                                                     14358390 T  0106:0
                                                                                           14358345
   END; IF VECTOR[2].[5:1] THEN SOFTI ← SOFTI-1;                                 14358391 T  0108:1
                                                                                           14358320
```

```
     IF (TSKA←PRT[P1MIX,TSX]).PBIT THEN                                          14358392 T  0111:0
BEGIN IF TSKA[6]=1 THEN TSKA[7]:=1;                                              14358393 T  0113:0
     IF(I:=TSKA[5]) NEQ 0 THEN BEGIN I:=[PRT[P1MIX,I]] INX 0;                    14358394 T  0116:1
     DELINKIT;WHILE(I:=M[I].[8:10]) NEQ 0 DO                                     14358395 T  0120:1
               BEGIN I:=[PRT[P1MIX,I]]INX 0;DELINKIT END END;                    14358397 T  0124:0
                                                                                                14358397
                                                                                                14358394
     IF (I←TSKA[8].[CF])≠0 THEN    % SOFTWARE INTERRUPTS DECLARED                14358398 T  0127:2
     BEGIN     IF NOT TSKA[8].[4:1] THEN                                         14358400 T  0129:2
                    SLEEP([TSKA[8]],@200000000000000);                           14358450 T  0131:1
               TSKA[8].[4:1] ← 0;                                                14358460 T  0133:2
               DO                     % DETACH SOFTWARE INTERRUPTS               14358550 T  0136:0
          BEGIN     IF (ABSEVT←PRT[P1MIX,I].[FF])≠0 THEN                        14358580 T  0136:0
                         BEGIN  WHILE NOT M[ABSEVT].[5:1] DO                     14358582 T  0138:2
                                   ABSEVT ← M[ABSEVT].[FF];                      14358584 T  0141:1
                                IF M[ABSEVT]≥0 THEN                              14358586 T  0145:0
                               SLEEP([M[ABSEVT]],@2000000000000000);             14358588 T  0146:2
                                M[ABSEVT] ← P(LOD,DUP,SSP);                      14358590 T  0148:3
                                T ← (K←PRT[P1MIX,I]).[FF];                       14358595 T  0151:0
                                A ← [PRT[P1MIX,I]] INX 0;                        14358597 T  0153:3
                                WHILE M[T].[FF]≠A DO T ← M[T].[FF];              14358598 T  0155:3
                                M[T].[FF] ← K.[FF];                              14358600 T  0162:0
                                M[ABSEVT] ← P(DUP,LOD,SSN);                      14358605 T  0164:3
                         END;                                                    14358610 T  0166:3
                                                                                                14358582
               I ← PRT[P1MIX,I].[CF];                                            14358615 T  0166:3
          END UNTIL I=0;                                                         14358620 T  0168:3
                                                                                                14358580
               TSKA[8].[4:1] ← 1;                                                14358625 T  0170:0
               END;                                                              14358630 T  0172:2
                                                                                                14358400
               TSKA[3]:=-1;                                                      14358640 T  0172:2
     END;                                                                        14358650 T  0174:0
                                                                                                14358393
     END;                                                                        14358700 T  0174:0
                                                                                                14358315
          JAR9 := VECTOR[9];                                                     14358710 T  0174:0
          CHAIN ← 0&VECTOR[9][FTC]&VECTOR[1][1:1:1]; VECTOR[9].[FF] ← 0;         14358800 T  0175:0
$ SET OMIT = NOT(BREAKOUT)                                                       14358999 T  0179:3
               IF VECTOR[2]<0 THEN  %  COBOL                                     14360100 T  0179:3
               IF VECTOR[1]>0 THEN  % NOT DS-ED                                  14360200 T  0180:3
               WHILE PRT[P1MIX,16]>0 DO ASR;%CLEAN OUT AIT                       14360300 T  0182:1
               IF VECTOR[1]>0 THEN % NOT DS-ED                                   14360310 T  0185:3
               FOR MOMMIX:=6 STEP 5 UNTIL 11 DO                                  14360320 T  0186:3
               BEGIN Q:=NFLAG(PRT[P1MIX,MOMMIX]); % AIT OR OAT ENTRY             14360330 T  0188:0
                    IF Q.[2:1] THEN % PRESENT, GRAB ADDRESS FROM LINK            14360340 T  0189:3
                      Q := Q & M[Q INX NOT 0][FTC];                              14360350 T  0190:2
                    IF Q.[33:3]=7 THEN % AUXILIARY MEMORY IN THE ACT             14360360 T  0193:3
                      DISKRTN(Q.[CF], Q.[8:10]);                                 14360370 T  0195:0
                    IF VECTOR[2]<0 THEN MOMMIX:=11; % COBOL HAS NO OAT           14360380 T  0197:2
               END;                                                              14360390 T  0199:3
                                                                                                14360330
               SLEEP([OLAYMASK],MOMMIX←TWO(P1MIX));                              14360400 T  0202:0
               OLAYMASK ← NOT MOMMIX AND OLAYMASK;                               14360500 T  0204:2
               MOTHER ← DALOC[P1MIX,0].[CF];                                     14360600 T  0206:0
               NEXTMOM := -1;  S := DALOCROW[P1MIX];                             14360700 T  0208:0
               WHILE (NEXTMOM := NEXTMOM+2)<MOTHER DO                            14360800 T  0210:0
```

```
                  FORGETUSERDISK(S[NEXTMOM],-500);                                  14360900 T  0212:1
                SLEEP([TOGLE],STOREMASK);                                           14361000 T  0214:1
                MOTHER ← (MOMMIX ← (NEXTMOM ←%                                      14361100 T  0215:3
                     PRT[P1MIX,4].[18:12]).[36:6]=P1MIX);%                          14361200 T  0215:3
                NEXTMOM ← NEXTMOM AND @77;%                                         14361300 T  0219:3
$ SET OMIT = NOT(AUXMEM)                                                            14361309 T  0221:0
$ SET OMIT = NOT(DEBUGGING AND AUXMEM)                                              14361512 T  0221:0
                WHILE(T←M[I]).[CF] ≠ 0 DO%                                          14362000 T  0221:0
                     BEGIN%                                                         14363000 T  0224:0
                     IF T > 0 THEN % IN USE AREA                          %167-     14364100 C  0224:0
                       IF T.AREAMIXF = P1MIX THEN % IN USE BY THIS MIX              14364200 C  0224:3
                         IF MOTHER AND (P(T.AREATYPEF,DUP) = CODEAREAV              14364300 C  0226:2
                             OR P(XCH) = SEGDICTAREAV) THEN % GIVE CODE             14364400 C  0228:2
                          M[I].AREAMIXF := NEXTMOM    % TO NEW MOM        %167-     14364500 C  0230:0
                         ELSE                                               %167-     14364600 C  0231:3
                           FORGETSPACE(I INX 2);                            %167-     14364700 C  0233:1
                     I := T.AREAFWDLINKF;                                   %167-     14364800 C  0235:0
                     END;%                                                          14367000 T  0236:1
                                                                                                  14363000
                INTABLEROW[P1MIX] ← 0;%                                             14367100 T  0236:3
$ SET OMIT = NOT(BREAKOUT)                                                          14367199 T  0238:0
$ SET OMIT = NOT(BREAKOUT)                                                          14367999 T  0238:0
                IF NEXTMOM≠0 THEN BEGIN%                                            14370010 T  0238:0
                     IF MOTHER THEN%                                                14370020 T  0239:1
                       IF PRT[NEXTMOM,4].[24:6]=@77 THEN%                           14370030 T  0239:2
                       NFO[(NEXTMOM-1)×NDX+1] ←%                                    14370035 T  0242:0
                       PRT[NEXTMOM,4] ← (*P(DUP))&0[18:18:15]%                      14370040 T  0244:2
                       ELSE BEGIN MOTHER ← NEXTMOM;%                                14370050 T  0246:1
                            DO UNTIL (MOTHER ← (PRT[MOTHER,4] ←%                    14370060 T  0248:3
                            NFO[(MOTHER-1)×NDX+1] ←%                                14370065 T  0249:3
                              (*P(DUP))&NEXTMOM[18:42:6]).[24:6])=@77;%             14370070 T  0251:3
                       END%                                                         14370080 T  0256:1
                                                                                                  14370050
                     ELSE BEGIN%                                                    14370090 T  0256:1
                          IF (PRT[MOMMIX,4].[24:6]=P1MIX) AND%                      14370100 T  0256:3
                            NEXTMOM=@77 THEN NFO[(MOMMIX-1)×NDX+1] ←%               14370110 T  0258:3
                            PRT[MOMMIX,4] ← (*P(DUP))&0[18:18:15]%                  14370115 T  0262:1
                          ELSE BEGIN%                                               14370120 T  0264:0
                               DO BEGIN MOTHER ← MOMMIX;                            14370130 T  0265:3
                                    MOMMIX ← PRT[MOMMIX,4].[24:6];%                 14370140 T  0266:2
                               END UNTIL MOMMIX=P1MIX;%                             14370150 T  0268:2
                                                                                                  14370130
                               NFO[(MOTHER-1)×NDX+1] ←%                             14370155 T  0269:3
                               PRT[MOTHER,4] ←%                                     14370160 T  0271:3
                                 (*P(DUP))&NEXTMOM[24:42:6];%                       14370165 T  0272:3
                     END  END;%                                                     14370170 T  0275:1
                                                                                                  14370120
                                                                                                  14370090
                          NFO[(P1MIX-1)×NDX+1] ←%                                   14370180 T  0275:1
                          PRT[P1MIX,4] ← (*P(DUP))&0[18:18:15];%                    14370190 T  0277:1
                END;%                                                               14370200 T  0280:1
                                                                                                  14370010
$ SET OMIT = NOT(AUXMEM)
          IF  VECTOR[2].[8:10]≠ 0 THEN%                                             14370299 T  0280:1
$ SET OMIT = STATISTICS                                                             14371000 T  0280:1
                FORGETSPACE(DIRECTORYSEARCH(ABS(VECTOR[0]),IF VECTOR[0]<0           14371999 T  0281:3
                     THEN "DISK    " ELSE ABS(VECTOR[1]),13));                      14372000 T  0281:3
$ POP OMIT                                                                          14373000 T  0284:0
                                                                                    14373001 T  0287:1
```

```
                $ SET OMIT = NOT(STATISTICS)
                     IF VECTOR[2].[8:10] = 1 THEN % COMPILER ON COMPILE AND GO      14373099 T  0287:1
                          BEGIN%                                                    14374000 T  0287:1
                               IF ERTOG=0 THEN%                                     14375000 T  0288:3
                                    BEGIN%                                          14376000 T  0289:1
                                         COMPLEXSLEEP((SCHEDULEIDS≠NOT 0) AND       14377000 T  0290:0
                                                      SHEETFREE);                   14378000 T  0290:2
14358386    ACCIDENTAL ENTRY AT 1                                                   14378100 T  0290:2
                                         LOCKTOG(SHEETMASK);                        14379000 T  0297:0
                                                                                                14379000
                                         S←[M[GETSPACE(31,2,0)+2]]&30[8:38:10];     14380000 T  0300:2
                                         DISKIO(T,-(S INX 0-1),30,                  14381000 T  0303:0
                                                              VECTOR[2],[FF]);      14382000 T  0306:3
                                         SLEEP([T],IOMASK);                         14383000 T  0308:0
                                         STREAM(A←0;B←P(,SCHEDULEIDS));             14383100 T  0309:2
                                         BEGIN SI←B;                                14383200 T  0310:3
                                            47(SKIP SB; SKIP DB; TALLY←TALLY+1;     14383300 T  0311:0
                                               IF SB THEN BEGIN END %           -    14383400 P  0312:0
                                                                                                14383400
                                                    ELSE JUMP OUT);                 14383450 T  0312:2
                                               DS←SET; A←TALLY;                     14383500 T  0313:2
                                         END STREAM;                                14383600 T  0314:0
                                                                                                14383200
                                         T ← P; S[3] ← 0&T[8:38:10];                14383700 T  0314:1
                                         S[25] ← CATCH;                             14383740 T  0317:0
                                         S[23].[24:24]←(CLOCK+P(RTR))DIV 60;        14383750 T  0318:1
                                         DISKIO(T,+(S INX 0-1),30,                  14383800 T  0321:3
                                                              VECTOR[2],[FF]);      14383900 T  0324:0
                                         SLEEP([T],IOMASK);                         14384000 T  0325:1
                                         I ← IF S[18] > MIXMAX THEN MIXMAX          14385000 T  0326:3
                                                               ELSE S[18];          14386000 T  0328:2
                                         IF SHEET[I].[CF] ≠ 0 THEN                  14387000 T  0330:0
                                         BEGIN DISKIO(T,-(S INX 0-1),30,            14388000 T  0331:2
                                                               SHEET[I],[FF]);      14389000 T  0334:2
                                               SLEEP([T],IOMASK);                   14390000 T  0335:3
                                               S[29] ← VECTOR[2],[FF];              14391000 T  0337:1
                                               DISKIO(T,+(S INX 0-1),30,            14392000 T  0339:1
                                                               SHEET[I],[FF]);      14392500 T  0341:2
                                               SLEEP([T],IOMASK);                   14393000 T  0342:3
                                         END ELSE SHEET[I] ← VECTOR[2],[FF];        14394000 T  0344:1
                                                                                                14388000
                                         SHEET[I],[FF] ← VECTOR[2],[FF];            14395000 T  0348:0
                                         UNLOCKTOG(SHEETMASK);                      14396000 T  0350:3
                                                                                                14396000
                                         FORGETSPACE(S INX 0);%             %165-   14396100 C  0354:1
                               END%                                                 14397000 T  0355:3
                                                                                                14377000
                     ELSE BEGIN%                                                    14398000 T  0355:3
                          RETURNEM:                                                 14398500 T  0356:1
                               S←[M[GETSPACE(31,2,0)+2]]&30[8:38:10];               14398600 T  0356:1
                               DISKIO(T,-(S INX 0-1),30,VECTOR[2],[FF]);            14398700 T  0360:0
                               SLEEP([T],IOMASK);                                   14398800 T  0363:3
                               FORGETESPDISK(VECTOR[2],[18:15]);%                   14399000 T  0365:1
                               LINK ← S[13];                                        14399100 T  0366:3
                               WHILE LINK≠0 DO                                      14399200 T  0367:3
                                 BEGIN DISKIO(T,-(S INX 0-1),30,LINK);              14399300 T  0369:0
                                       SLEEP([T],IOMASK);                           14399400 T  0372:0
```

```
                                    FORGETESPDISK(LINK); LINK ← S[29];          14399500 T  0373:2
                               END;                                             14399600 T  0375:1
                                                                                            14399300
                               FORGETSPACE(S);                                  14399700 T  0375:3
                          END                                                   14400000 T  0376:3
                                                                                            14398000
                     END  ELSE%                                                 14401000 T  0376:3
                                                                                            14375000
                          IF VECTOR[2].[8:10] = 0 THEN%                         14402000 T  0376:3
                               BEGIN%                                           14403000 T  0378:3
               VECTOR[9]:=VECTOR[9].[CF];                                       14403900 T  0379:1
               FOR I←1 STEP 1 UNTIL VECTOR[9] DO%                               14404000 T  0381:1
               IF VECTOR[9+I] ≠ 0 THEN%                                         14405000 T  0385:1
               FORGETUSERDISK(VECTOR[9+I],-VECTOR[8]);                          14406000 T  0386:3
               IF VECTOR[2].[7:1] THEN VECTOR[2].[8:10]←2;%FOR TASK LOG         14406100 T  0390:0
                               END ELSE                                         14407000 T  0394:0
                                                                                            14403000
                          IF VECTOR[2].[8:10]=4%                                14407100 T  0394:0
                             THEN GO TO RETURNEM;                               14407200 T  0395:3
               IF VECTOR[0]<0 THEN                                              14408000 T  0396:2
               IF ERTOG ≠ 0 THEN%                                               14409000 T  0397:2
                    VECTOR[2].[8:10] ← 3;%                                      14410000 T  0398:3
               I ← P1MIX;%                                                      14411000 T  0401:3
               COMMENT SUBTRACT CORE REQUIREMENTS FROM CORE WORD;                14411100 T  0402:2
               CORE.[18:15]←CORE.[18:15] - NFO[(P1MIX-1)×NDX+2].[18:15];        14411200 T  0402:2
$ SET OMIT = NOT(AUXMEM)                                                        14411309 T  0407:0
$ SET OMIT = NOT(DATACOM )                                                      14411499 T  0407:0
               IF CHAIN GTR 0 THEN                                              14411620 T  0407:0
               BEGIN S:=[M[SPACE(5)]]&5[8:38:10];                               14411640 T  0407:3
                    DISKWAIT(-(S INX 0),5,CHAIN);                               14411660 T  0412:0
                    ZIPPER(S[1],S[2],S[3]);                                     14411680 T  0414:1
                    FORGETSPACE(S);                                             14411700 T  0416:1
               END;                                                             14411720 T  0417:1
                                                                                            14411640
               IF CHAIN ≠ 0 THEN FORGETESPDISK(ABS(CHAIN));                     14411740 T  0417:1
               IF VECTOR[2].[3:1] THEN                                          14411800 T  0419:2
               BEGIN                                                            14411810 T  0420:2
                 NT1:=TYPEDSPACE(5,MAINTBUFFAREAV);%                  %167-     14411820 P  0421:0
                 M[NT1-2].[9:6] := 0;                                           14411830 T  0423:1
                 M[NT1  ]:= 0 & P1MIX[20:43:5];                                 14411840 T  0426:2
                 M[NT1+1]:= VECTOR[5].[1:23];                                   14411850 T  0429:0
                 M[NT1+2]:= XCLOCK & VECTOR[2][1:1:17] &                        14411860 T  0431:3
                                (VECTOR[1]<0)[18:42:6];                         14411870 T  0434:2
                 M[NT1+3]:= VECTOR[0];                                          14411880 T  0436:3
                 M[NT1+4]:= VECTOR[1];                                          14411890 T  0439:0
                 LINKUP(14,NT1);                                                14411900 T  0441:1
               END;                                                             14411910 T  0442:1
                                                                                            14411810
$ SET OMIT = PACKETS                                                            14411999 T  0442:1
    BEGIN; STREAM(TK←VECTOR[2].[7:1],B←IF VECTOR[1] <0 THEN 2 ELSE%110-         14414000 P  0442:1
                    VECTOR[2].[8:10]≠3,I,Q←Q←((NT1←(XCLOCK DIV 3600)            14415000 T  0445:3
                    ) MOD 60 + (NT1 DIV 60)×100), V:=VECTOR                     14415100 T  0448:0
$ SET OMIT = NOT PACKETS                                                        14415150 T  0451:1
                    ,T:=T:=SPACE(10)                                            14415200 T  0451:1
$ POP OMIT                                                                      14415250 T  0451:3
                    );                                                          14415300 T  0451:3
                 BEGIN%                                                         14416000 T  0454:1
```

```
$ SET OMIT = PACKETS                                                                14416999 T  0454:1
$ SET OMIT = NOT(PACKETS)                                                           14418099 T  0454:1
                    SI:=V;SI:=SI+1;DS:=LIT" ";DS:=7CHR;                             14418100 T  0454:1
                    SI:=SI+1;DS:=LIT"/";DS:=7CHR;                                   14418110 T  0455:2
$ POP OMIT                                                                          14418111 T  0456:2
                DS←LIT"="; SI←LOC I; DS←2DEC;                                       14419000 T  0456:2
                I←DI; DI←DI-2; DS←FILL; DI←I;                                       14419500 T  0457:2
                    CI ← CI+B;%                                                     14420000 T  0458:2
                    GO TO E;%                                                       14421000 T  0459:0
                    GO TO OK;%                                                      14422000 T  0459:1
                    DS←7 LIT " DS-ED ";                                             14423000 T  0459:2
                    GO TO X;%                                                       14424000 T  0460:3
            OK:%                                                                    14425000 T  0461:0
                    DS←5 LIT " EOJ ";                                               14426000 T  0461:0
                    TK(DI←DI-2; DS←2 LIT "T ");  % END OF TASK  %110-               14426100 C  0462:0
                    GO TO X;%                                                       14427000 T  0463:2
            E:      DS←11 LIT " SYNTX ERR ";                                        14428000 T  0463:3
            X:      DS← 4 DEC; DS←LIT "←";                                          14429000 T  0465:2
                END;                                                                14429100 T  0466:1
                                                                                                  14416000
$ SET OMIT = PACKETS                                                                14429150 T  0466:2
$ SET OMIT = NOT RJE OR OMIT                                                        14430190 T  0466:2
            SPOUTER(T,0,(EOJMESS AND NOT(JAR9,[2:1])));                             14430400 T  0466:2
        END;                                                                        14430600 T  0469:2
                                                                                                  14414000
        SIGNOFF(VECTOR,FILEBLOCK,0);                                                14430800 T  0469:2
        FORGETSPACE(VECTOR);                                                        14431000 T  0471:1
 $ POP OMIT OMIT                                                                    14431010 T  0472:1
 $ SET OMIT = NOT(AUXMEM)                                                           14431299 T  0472:1
 $ SET OMIT = NOT(WORKSET)                                                          14431400 T  0472:1
STOPLOOP:                                                                           14431410 T  0472:1
            IF WKSETSTOPJOBS NEQ 0 THEN % JOB WAS AUTO-STOPPED                      14431420 T  0472:1
            IF NOT(JAR9,SYSJOBF) THEN % NOT EOJ FOR "SYSTEM" JOB                    14431425 T  0473:1
               BEGIN                                                                14431430 T  0474:3
               STNEXT:=IF STNEXT=0 THEN STQUEMAX ELSE STNEXT-1;  %138-              14431440 C  0475:1
               STOPMIX:=STQUE[STNEXT];                           %138-              14431450 P  0481:1
               STQUE[STNEXT]:=0;                                 %138-              14431460 P  0483:0
               STFIRST := (STFIRST+1),[44:4]; % POINT TO NEXT CELL.                 14431470 T  0485:0
               IF (STOPMIX GTR 0) AND (STOPMIX LEQ MIXMAX) THEN                     14431480 T  0488:3
                  IF JARROW[STOPMIX] NEQ 0 THEN                                     14431490 T  0490:2
                     BEGIN                                                          14431500 T  0492:0
                     IF STOPSET(STOPMIX) THEN % NOT YET STOPPED                     14431502 T  0492:2
                     BEGIN                                                          14431504 T  0494:0
                     PRTROW[STOPMIX],[PSF]:=0;                                      14431506 T  0494:2
                     WKSETSTOPJOBS:=WKSETSTOPJOBS AND                               14431508 T  0497:0
                                    NOT (TWO(STOPMIX));                             14431510 T  0498:0
                     JAR[STOPMIX,9],[3:1]:=0;                                       14431512 T  0499:3
                     GO STOPLOOP;                                                   14431514 T  0502:3
                     END ELSE                                                       14431516 T  0505:0
                                                                                                  14431504
                     BEGIN REPLY[STOPMIX]:=VOK; % WAKE IT UP                        14431518 T  0505:0
                     STREAM(J:=JARROW[STOPMIX],STOPMIX,                             14431520 T  0506:3
                           D:=Q:=SPACE(10));                                        14431530 T  0507:3
                        BEGIN                                                       14431540 T  0510:1
                        SI:=J; DS:=9LIT" AUTO-OK ";                                 14431550 T  0510:1
                        2(SI:=SI+1; DS:=7CHR; DS:=LIT"/");                          14431560 T  0512:0
                        DI:=DI-1; DS:=LIT"="; SI:=LOC STOPMIX;                      14431570 T  0513:2
```

```
                    DS:=2DEC; DS:=LIT"←"; DI:=DI-3; DS:=FILL;                14431580 T  0514:2
                    END STREAM STATEMENT;                                    14431590 T  0515:3
                                                                                          14431540
                     SPOUTER(Q,PSEUDOMIX[STOPMIX],1);            %525-       14431600 P  0516:0
                    END;                                                     14431602 T  0517:2
                                                                                          14431518
                     END % IF AWAKENING A JOB                                14431610 T  0517:2
                                                                                          14431500
                   ELSE GO TO STOPLOOP                                       14431620 T  0517:2
                 ELSE GO TO STOPLOOP;                                        14431630 T  0517:2
                 END; % IF JOBS WERE AUTO-STOPPED                            14431640 T  0517:2
                                                                                          14431430
              WKSETSWITCHTIME := CLOCK+P(RTR);                               14431650 T  0517:2
$ POP OMIT % WORKSET                                                         14431660 T  0519:1
$ SET OMIT = NOT(WORKSET)                                                    14431970 T  0519:1
              WKSETNOSELECT←(WKSETNOSELECT AND (WKSETSTOPJOBS ≠ 0));         14431975 C  0519:1
              IF WKSETSTOPJOBS=0 THEN                                        14431980 T  0523:3
$ POP OMIT % WORKSET                                                         14431990 T  0524:3
                  SELECTION;%                                                14432000 T  0524:3
              KILL([MSCW]);                                                  14434000 T  0526:2
   END L5COM;%                                                               14435000 T  0527:1
                                                                                          14344000
                                                                          SIZE= 0528 WORDS
```

```
                PROCEDURE ZIPPER(W1,W2,USERSTA);VALUE W1,W2,USERSTA;                                    14531000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00429
                REAL W1,W2,USERSTA;                                                                    14531100 T  0000:0
                        BEGIN REAL T,I;                                                                14532000 T  0000:0
STACK(F+1) = T
STACK(F+2) = I
                        T ← GETSPACE(12,CONTROLCARDAREAV,0)+4;%                        %167-           14533000 P  0000:0
                        M[T-4],[9:6]←0;%                                                               14534000 T  0002:3
                        IF (I←USERCODE[P1MIX])=ABS(NOT 0) THEN I← 0;                                   14534500 T  0006:0
                        STREAM(K←@14,A←[W1],C←I,B←T);                                                  14535000 T  0009:1
                        BEGIN                                                                          14536000 T  0010:3
                        SI←LOC K; SI←SI+7; DS← CHR;                                                    14537000 T  0010:3
                        DS:= 5 LIT "USER=";SI:=LOC C; SI:=SI+1; DS:= 7 CHR;                            14537100 T  0011:2
                        DS← 9 LIT ";EXECUTE ";SI←A; SI←SI+1;                                           14537200 T  0013:1
                        DS← 7 CHR; DS← LIT "/"; SI←SI+1; DS← 7 CHR;                                    14538000 T  0015:1
                        DS← 6 LIT ";END.←"; 37(DS← LIT " ");                                           14539000 T  0016:2
                        END;                                                                           14540000 T  0018:2
                                                                                                                    14536000
                        IF USERSTA≠0 THEN                                                              14540100 T  0018:3
                          BEGIN                                                                        14540200 T  0019:2
                             I:=30;                                                                    14540300 T  0020:0
                             IF USERSTA.[19:1] THEN ELSE T:=T&USERSTA[9:15:9];                         14540350 T  0020:3
                          END                                                                          14540400 T  0024:1
                                                                                                                    14540200
                             ELSE                                                                      14540500 T  0024:1
                        I←IF P1MIX=0 OR USERCODE[P1MIX]=MCP THEN 31 ELSE 26;                           14541000 T  0024:1
 $ SET OMIT = PACKETS                                                                                  14541049 T  0029:2
 $ SET OMIT = NOT(PACKETS)                                                                             14541089 T  0029:2
                        IF PSEUDOMIX[P1MIX] NEQ 0 THEN NYLONZIPPER[P1MIX],[2:1]:=0;                    14541090 T  0029:2
                       INDEPENDENTRUNNER(P(,CONTROLCARD),T&I[2:42:6]                                   14541100 T  0033:2
                        &P1MIX[18:42:6]&PSEUDOMIX[P1MIX][24:39:9],192);                                14541110 T  0034:2
                        IF PSEUDOMIX[P1MIX] NEQ 0 THEN                                                 14541120 T  0038:0
                            SLEEP([NYLONZIPPER[P1MIX]],@1000000000000000);                             14541130 T  0039:0
$ POP OMIT                                                                                             14541131 T  0041:1
                        END ZIPPER;%                                                                   14542000 T  0041:1
                                                                                                                    14532000
                                                                                                              SIZE= 0043 WORDS
```

```
                REAL PROCEDURE FUF(A,B,L); VALUE A,B,L; REAL A,B,L;                                  14543000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00431
                      BEGIN%                                                                         14544000 T  0000:0
                      REAL  I,J,R,T,Z;%                                                              14545000 T  0000:0
STACK(F+2) = I
STACK(F+3) = J
STACK(F+4) = R
STACK(F+5) = T
STACK(F+6) = Z
                      REAL H;                                                                        14545100 T  0000:0
STACK(F+7) = H
                      ARRAY  X[*];%                                                                  14546000 T  0000:0
STACK(F+10) = X
                      INTEGER S;                                                                     14546100 T  0000:0
STACK(F+11) = S
                $ SET OMIT = SHAREDISK                                                               14546199 T  0000:0
                      DEFINE R1=R#, X1=X#;                                                           14546200 T  0000:0
                $ POP OMIT                                                                           14546201 T  0000:0
                $ SET OMIT = NOT SHAREDISK                                                           14546299 T  0000:0
                      LABEL LL,FOUND,WHY,BYE;                                                        14547000 T  0000:0
                      LABEL CHECK,DOWN,BOMBOUT,DSD;                                                  14548000 T  0000:0
                %                                                                                    14548900 T  0000:0
                   REAL SUBROUTINE THERE;%                                                           14549000 T  0000:0
                %                                                                                    14549100 T  0001:0
                %       ON EXIT, X IS THE LAST BYPASS BLOCK READ AND J IS ITS ADDRESS,               14549110 T  0001:0
                %       IF THERE IS TRUE, I IS THE INDEX OF THE ENTRY FOR THE FILE AND,              14549120 T  0001:0
                %       FOR SECURITYCHECK, H IS THE NEGATIVE OF ITS HEADER ADDRESS.                  14549125 T  0001:0
                %       IF THERE IS FALSE, T IS THE ADDRESS OF THE FIRST BLOCK WHICH                 14549130 T  0001:0
                %       HAS A VACANT SLOT.                                                           14549140 T  0001:0
                %                                                                                    14549150 T  0001:0
                      BEGIN%                                                                         14550000 T  0001:0
                           T:=0;                                                                     14550500 T  0001:0
LL:                        FOR I:=0 STEP 3 UNTIL 57 DO                                             14551000 T  0001:3
                           BEGIN IF (X[I] EQV A) = NOT 0 THEN                                      14551500 T  0003:0
                                 IF (X[I+1] EQV B) = NOT 0 THEN                                    14552000 T  0004:3
                                 BEGIN P(1);                                                       14552500 T  0007:2
                                      H:=NABS(X[I+2]);                                             14552750 T  0008:1
                                      GO DOWN;                                                     14553000 T  0010:0
                                 END;                                                              14553500 T  0010:2
                                                                                                                14552500
                                 IF (X[I] EQV @14) = NOT 0 THEN                                    14554000 T  0010:2
                                 IF T=0 THEN T:=J;                                                 14554500 T  0012:1
                           END;                                                                    14555000 T  0014:3
                                                                                                                14551500
                           IF (Z:=X[2],[FF])≠0 THEN                                                14555500 T  0017:0
                           BEGIN DISKWAIT(=R,60,J:=Z);                                             14556000 T  0019:0
                                 GO TO LL;                                                         14556500 T  0021:2
                           END;                                                                    14557000 T  0022:0
                                                                                                                14556000
                           IF T=0 THEN T:=J;                                                       14557500 T  0022:0
                           P(0);                                                                   14558000 T  0024:0
DOWN:                      THERE:=P;                                                               14558500 T  0024:1
                      END;%                                                                          14559000 T  0024:2
                                                                                                                14550000
                $ SET OMIT = NOT(SHAREDISK)                                                          14559099 T  0024:3
                      A:=ABS(A);                                                                     14559200 T  0024:3
                      X:=[M[R:=SPACE(60)]]&60[8:38:10];                                              14559250 T  0028:1
```

```
                IF (A OR B).[1:5]≠0 OR A=@14 OR A=@114 THEN                                    14559300 T  0032:2
                BEGIN                                                                          14559400 T  0036:1
                    TERMINATE(P1MIX&75[18:33:15]); GO DSD;                                     14559500 T  0036:3
                END;                                                                           14559600 T  0038:2
                                                                                                           14559400
$ SET OMIT = SHAREDISK                                                                         14559990 T  0038:2
                LOCKDIRECTORY;                                                                 14560000 T  0038:2
                                                                                                           14560000
                                                                                                           14560000
$ POP OMIT                                                                                     14560010 T  0045:0
                S:=SCRAMBLE(A,B);                                                              14562000 T  0045:0
CHECK:          DISKWAIT(-R,-60,(J:=S));                                                       14563000 T  0052:0
                IF P1MIX ≠0 THEN%                                                              14564000 T  0054:1
                IF THERE THEN%                                                                 14567000 T  0055:0
                BEGIN                                                                          14568000 T  0057:0
$ SET OMIT = NOT SHAREDISK                                                                     14568890 T  0057:2
                UNLOCKDIRECTORY;                                                               14569000 T  0057:2
                                                                                                           14569000
                                                                                                           14569000
$ POP OMIT OMIT                                                                                14569010 T  0061:0
                H←SECURITYCHECK(A,B,USERCODE[P1MIX],H)≠7;                                      14569200 T  0061:0
                Z:=VWY&VOK[36:42:6]&(IF H THEN 0 ELSE VRM)[30:42:6];                           14569500 T  0063:3
WHY:            STREAM(A:=[A], B:=JAR[P1MIX,*], C:=P1MIX, UC:=H,                               14570000 T  0068:0
                        D:=J:=SPACE(10));                                                      14570100 T  0069:2
                    BEGIN%                                                                     14571000 T  0072:0
                    DS←13LIT"#DUP LIBRARY ";%                                                  14572000 T  0072:0
                    UC(DS←15LIT"(ILLEGAL USER) ");                                             14572100 T  0074:0
                    SI←A       ;SI←SI+1;DS←7CHR;%                                              14573000 T  0077:0
                    DS←LIT"/" ;SI←SI+1;DS←7CHR;%                                               14574000 T  0077:3
                    DS←LIT":";%                                                                14575000 T  0078:3
                    SI←B       ;SI←SI+1;DS←7CHR;%                                              14576000 T  0079:1
                    DS←LIT" " ;SI←SI+1;DS←7CHR;%                                               14577000 T  0080:0
                    DS:=LIT"="; SI:=LOC C; DS:=2 DEC; DS:=LIT"←";                              14578000 T  0081:0
                    DI←DI-3; DS←FILL;                                                          14578500 T  0082:2
                    END;%                                                                      14579000 T  0083:0
                                                                                                           14571000
                SPOUT(J);                                                                      14580000 T  0083:1
                REPLY[P1MIX]:=-Z;                                                              14581000 T  0084:2
                IF AUTODS THEN                                                      %747-      14581500 C  0086:0
                IF H=1 THEN TERMINATE(P1MIX&61[CTF]) ELSE REPLY[P1MIX]←VRM%747-                14581700 C  0086:3
                ELSE                                                                %747-      14581800 C  0092:3
                COMPLEXSLEEP(TERMSET(P1MIX) OR (REPLY[P1MIX] GTR 0));                          14582000 T  0093:1
14378100    ACCIDENTAL ENTRY AT 0
                IF TERMSET(P1MIX) THEN                                                         14583000 T  0100:3
            DSD:    BEGIN FOR J:=M[L+10]+10 STEP -1 UNTIL 11 DO                                14583100 T  0102:1
                        IF M[L+1]≠0 THEN FORGETUSERDISK(M[L+1],-M[L+9]);                       14583200 T  0108:1
                        GO TO BOMBOUT;                                                         14583300 T  0115:0
                    END;                                                                       14583400 T  0115:2
                                                                                                           14583100
                IF NOT WHYSLEEP(Z) THEN GO TO WHY;                                             14584000 T  0115:2
                IF REPLY[P1MIX].[18:30]=VRM THEN                                               14585000 T  0116:3
            $ SET OMIT = NOT(DATACOM )                                                         14585050 T  0118:1
                    BEGIN                                                                      14585200 T  0118:1
                        IF P(DIRECTORYSEARCH(-A,B,7),DUP)=2                                    14585300 T  0118:3
                          THEN BEGIN  P(DEL);          % ALWAYS TO SPO          %589-       14585350 P  0120:2
                               LBMESS( A, B, -7, 25, 0, 0, 1 ); END              %589-       14585360 C  0121:3
                                                                                                           14585350
```

```
                    ELSE IF P=3 THEN GO DSD;                                    14585400 T  0124:1
$ SET OMIT = NOT DATACOM                                                        14585490 T  0125:3
           END;                                                                 14587200 T  0125:3
                                                                                            14585200
        REPLY[P1MIX]:=0;                                                        14588000 T  0125:3
$ SET OMIT = SHAREDISK                                                          14588090 T  0127:0
        LOCKDIRECTORY;                                                          14588100 T  0127:0
                                                                                            14588100
                                                                                            14588100
$ POP OMIT                                                                      14588110 T  0133:2
        GO TO CHECK;%                                                           14589000 T  0133:2
        END ELSE ELSE T:=S;             % SETS UP FOR P1MIX=0                  14590000 T  0135:0
                                                                                            14568000
%                                                                               14590900 T  0136:3
%       THE FILE IS NOT THERE. WE SEARCH FOR A VACANCY. IF ONE IS FOUND         14590910 T  0136:3
%       Z AND T ARE ITS ADDRESS. IF THERE ISNT ONE, Z IS THE ADDRESS OF         14590920 T  0136:3
%       THE LAST BLOCK AND T IS SET TO THE ADDRESS OF THE NEW BLOCK.            14590930 T  0136:3
%                                                                               14590940 T  0136:3
$ SET OMIT = NOT SHAREDISK                                                      14590990 T  0136:3
        DO BEGIN                                                                14591500 T  0136:3
             IF (Z:=T)≠J THEN DISKWAIT(=R,60,Z);                                14592000 T  0136:3
             FOR I←0 STEP 3 UNTIL 57 DO                                         14593000 T  0140:0
             IF (X[I] EQV @14)= NOT 0 THEN GO TO FOUND;                         14594000 T  0141:0
        END UNTIL (T:=X[2].[FF])=0;                                             14595000 T  0145:2
                                                                                            14591500
        X[2].[FF]← BYPASS ← BYPASS-2;                                           14596000 T  0148:0
        IF BYPASS.[CF] LEQ BYPASS.[FF] THEN GO TO BYE;                          14598000 T  0151:0
$ SET OMIT = SHAREDISK                                                          14598090 T  0153:1
        DISKWAIT(R,60,Z);               % WRITE OUT POINTER TO NEW BLOCK        14598100 T  0153:1
$ POP OMIT                                                                      14598110 T  0154:2
        T:=BYPASS.[CF];                                                         14598200 T  0154:2
        X1[0]:=@14; MOVE(59,X1,X1 [NX 1);                                       14598300 T  0155:3
$ SET OMIT = NOT SHAREDISK                                                      14598390 T  0159:2
        I:=0;                                                                   14598500 T  0159:2
    FOUND:%                                                                     14599000 T  0160:1
                PBCOUNT←PBCOUNT+((((A EQV"PBD    ")=NOT 0) OR                   14599900 T  0160:1
                          ((A EQV"PUD    ")=NOT 0)) AND (B.[CF]=1));            14599910 T  0162:0
        X[I]←A; X[I+1]←B; X[I+2].[CF]←NEXTSLOT;                                 14600000 T  0166:0
$ SET OMIT = NOT SHAREDISK                                                      14600290 T  0171:2
        DISKWAIT(R1,60,T);                                                      14600500 T  0171:2
%                                                                               14600900 T  0172:3
%       UPDATE THE NAME SEGMENT, BUT DONT WRITE IT OUT UNTIL THE NEW            14600910 T  0172:3
%       HEADER IS WRITTEN.                                                      14600920 T  0172:3
%                                                                               14600930 T  0172:3
        J←(NEXTSLOT-DIRECTORYTOP-3)&0[44:44:4]+DIRECTORYTOP+19;                 14601000 T  0172:3
        I:=((T:=NEXTSLOT)-J)×2+30;                                              14601500 T  0176:2
        DISKWAIT(-R1,-30,J);                                                    14602000 T  0179:1
        NEXTSLOT:=X1[I+1];                                                      14602500 T  0181:0
        X1[I]:=A; X1[I+1]:=B;                                                   14603000 T  0182:2
        IF NEXTSLOT=0 THEN              % GOING TO USE EOF RECORD              14603100 T  0185:2
        IF I=0 THEN                     % WRITE NEW EOF RECORD BEFORE          14603110 T  0186:1
        BEGIN P(X1[28],X1[29]);         % DESTROYING CURRENT ONE                14603200 T  0187:2
             X1[28]:=@114;              % SAVE NAME, REPLACE WITH "END" FLAG.   14603300 T  0189:0
             X1[29]:=0;                                                         14603310 T  0190:1
             NEXTSLOT:=T+30;                                                    14603320 T  0191:2
             BYPASS.[FF] ← J+16;                                                14603330 T  0192:3
             DISKWAIT(R1,30,J+16);                                              14603400 T  0194:2
```

```
                P([X1[29]],+,[X1[28]],+);       % RESTORE CLOBBERED NAME          14603600 T  0196:1
                    IF J+16 GEQ BYPASS.[CF] THEN                                  14603700 T  0197:3
    BYE:          BYBY("DIRECTORY FULL←",15);                                     14603750 T  0199:2
                                                                                                14603750
                                                                                                14603750
          END ELSE                                                                14603800 T  0206:0
                                                                                                14603200
          BEGIN X1[I-2]:=@114; X1[I-1]:=0; NEXTSLOT:=T-1 END;                     14604000 T  0206:0
                                                                                                14604000
%                                                                                 14604900 T  0213:3
%         NOW WE CAN WRITE EVERYTHING OUT. NOTE THAT IN ORDER TO MINIMIZE         14604910 T  0213:3
%         THE DAMAGE CAUSED BY AN UNTIMELY HANG, THE MAIN AND (FOR                14604920 T  0213:3
%         SHAREDISK) THE BYPASS DIRECTORIES ARE CORRECT AT ALL TIMES.             14604930 T  0213:3
%                                                                                 14604940 T  0213:3
 $ SET OMIT = NOT SHAREDISK                                                       14605490 T  0213:3
          DISKWAIT(L+1,-30,T);                    % FILE HEADER                   14607000 T  0213:3
 $ SET OMIT = NOT SHAREDISK                                                       14608490 T  0215:3
          DISKWAIT(R1,-30,J);                     % NAME SEGMENT                  14609000 T  0215:3
 $ SET OMIT = NOT SHAREDISK                                                       14609990 T  0217:1
 $ SET OMIT = SHAREDISK                                                           14617990 T  0217:1
          UNLOCKDIRECTORY;                                                        14618000 T  0217:1
                                                                                                14618000
                                                                                                14618000
 $ POP OMIT                                                                       14618010 T  0220:3
          EUF:=T;                                                                 14619000 T  0220:3
    BOMBOUT:%                                                                     14620000 T  0221:2
          FORGETSPACE(R);                                                         14621000 T  0221:2
          END  ENTERUSERFILE ;%                                                   14622000 T  0222:1
                                                                                                14544000
                                                                                  SIZE= 0224 WORDS
```

```
                PROCEDURE COM11; COMMENT ALGOL I/O COMMUNICATE;%                                                14623000 T  00010
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00439
                BEGIN
                REAL    CODE=-4,    TANK=-5,    ROW=-6,     FID=-7,     MID=-8,          %740-        14624000 P  00010
STACK(F-4) = CODE
STACK(F-5) = TANK
STACK(F-6) = ROW
STACK(F-7) = FID
STACK(F-10) = MID
                        STA=-6,     RESULT=-7, TIMEOUT=-7 ;                              %740-        14624200 P  00010
STACK(F-6) = STA
STACK(F-7) = RESULT
STACK(F-7) = TIMEOUT
                NAME    PHYL=-5;        %                                                %740-        14624300 P  00010
STACK(F-5) = PHYL
                ARRAY   HEADER=-5[*],   FINAL=-6[*]; %                                   %740-        14624400 P  00010
STACK(F-5) = HEADER
STACK(F-6) = FINAL
                REAL    B, T, F, S;  %                                                   %740-        14624450 C  00010
STACK(F+1) = B
STACK(F+2) = T
STACK(F+3) = F
STACK(F+4) = S
                NAME    A;  %                   % SAME STACK LOCATIONS AS BEFORE          %740-        14624500 P  00010
STACK(F+5) = A
                REAL    INFO, LOC, USASI, I;  %                                          %740-        14624550 C  00010
STACK(F+6) = INFO
STACK(F+7) = LOC
STACK(F+10) = USASI
STACK(F+11) = I
                ARRAY   FPB[*],  FIB[*] ; %                                              %740-        14624600 P  00010
STACK(F+12) = FPB
STACK(F+13) = FIB
                 $                                                  SET OMIT = NOT DATACOM%740-        14624990 C  00010
                LABEL   PARITY,   EOF,      FOT,      RDATA,     SELERR,    MESSAGE,  %740-        14627200 P  00010
                        DISKSPACE,OPEN,     CLOSE,    READC,     GIN,       NG,       %740-        14627300 P  00010
                        SLEAP,    GRABIT,   READSOUGHT,          READSOUGHT2,         %740-        14627400 P  00010
                        BACK,     SEEKDC,   DCWRITER, WHILOOP,   COBOLDCWR, FINDBUF,  %740-        14628000 P  00010
                        PURGELOCK,SPACE,    REFILL,   READLABFL, IOREQ,     DCBUFRLS,            14628100 P  00010
                        ROTATE,   ABN;      %                                            %740-        14629000 P  00010
                                                                                         %740-        14630000 P  00010
                SWITCH FUNCTION <-  OPEN,     PARITY,   EOF,      EOT,       DISKSPACE,            14631000 P  00010
                                    SEEKDC,   CLOSE,    RDATA,    SELERR,    SPACE,    %740-        14632000 P  00010
                                    REFILL,   READLABEL,IOREQ,    ROTATE,    READC,    %740-        14632100 P  00010
                                    READSOUGHT,DCBUFRLS,DCWRITER, FINDBUF,   COBOLDCWR,            14632200 P  00010
                                    PURGELOCK ; %                                        %740-        14632900 P  00010
                                                                                         %740-        14633000 P  00010
                 GO TO FUNCTION [CODE] ;  %                                              %740-        14634000 P  00010
                                                                                         %740-        14635000 P  00141
                PARITY: INFO<-"PARITY ";  B<-"ERROR<- ";  %                              %740-        14636000 P  00141
                        GO TO MESSAGE;    %                                              %740-        14636100 P  00153
                EOF:    INFO<-"END OF ";  B<-"FILE<-  ";  %                              %740-        14637000 P  00190
                        GO TO MESSAGE;    %                                              %740-        14639000 P  00202
                EOT:    INFO<-"FILE TO";  B<-"O SMALL";   T<-"<-      ";  %             %740-        14640000 P  00230
                        GO TO MESSAGE;    %                                              %740-        14641000 P  00251
                     :: % AT PURGELOCK, GO TO RDATA SHOULD BE TO MESSAGE ON WORD BOUNDY                     14641999 C  00290
                RDATA:  INFO<-"DATA ER";  B<-"ROR, FM";   T<-"T=R,<-  ";  %             %740-        14642000 P  00290
```

```
          GO TO MESSAGE;   %                                                %740-        14642100 P  0031:1
SELERR:   INFO←"INVALID";  B←" OPERAT";  T←"ION ON←";  %                   %740-        14643000 P  0035:0
          %                                                                 %740-        14643100 P  0037:1
MESSAGE:      FPB←PRT[P1MIX,3]; FIB←M[P(,TANK,LOD),[33:15]-3];              %740-        14644000 P  0037:1
              IF FIB[5],[1:1] THEN INFO ← "-" INV" OR M;  %                 %740-        14644400 C  0041:2
              STREAM ( X ← INFO,  B,  T,    % THESE 3 MUST BE THIS ORDER                14645000 P  0044:2
                       Z ← 0,  Q ← TANK≠0,  %                               %740-        14645400 C  0045:2
                       F ← IF TANK=0 THEN 0 ELSE [FPB[FIB[4],[13:11]]],                  14645600 C  0046:2
                       D ←( CODE ← GETSPACE(12,2,0) +2)  ); %               %740-        14645800 C  0049:3
              BEGIN DS ← LIT "-";  SI ← LOC X;  %                           %740-        14646000 P  0052:1
                    IF SC  = 0 THEN  % MESSAGES WITH NEW WORDING            %740-        14646200 C  0053:0
                    BEGIN  3( SI←SI+1;  % CHARS IN INFO, B & T IN STACK                 14646400 C  0053:2
                       7( IF SC≠"←" THEN DS←CHR ELSE JUMP OUT 2 TO L) );                14646600 C  0054:0
                       L:  DS←LIT " ";  %                                   %740-        14646800 C  0056:2
                    END ELSE  % UNCHANGED MESSAGES                          %740-        14647000 P  0057:0
                                                                                                     14646400
                    BEGIN  SI←SI+5;  DS←3 CHR;  SI←LOC X;                   %740-        14647200 P  0057:1
                       IF SC="8" THEN DS ← 11 LIT  %                        %740-        14647400 P  0058:0
              "WRITE TO 0 "  %                                              %740-        14647600 P  0058:3
                       ELSE IF SC=@30 THEN DS ← 10 LIT  % "INV"             %740-        14648000 P  0060:1
              "ALID USER "  %                                               %740-        14648200 C  0061:1
                       ELSE IF SC=@20 THEN DS ← 10 LIT  %                   %740-        14648400 C  0062:2
              " WRT/SEEK "  %                                               %740-        14648600 C  0063:2
                    END;  %  NEXT, OPTIONALLY ADD <FILE SPECIFIER>          %740-        14649000 P  0064:3
                                                                                                     14647200
                    Q( SI←F;  X←DI;  DI←LOC Z;  %                           %740-        14650000 P  0064:3
                       IF 8 SC≠DC THEN  % MFID ≠ "0000000"                  %740-        14650200 C  0066:0
                         BEGIN  SI←F;  SI←SI+1;  DI←X;  %                   %740-        14650400 C  0066:2
                           DS←7 CHR;  DS←LIT "/";  X←DI;  %                 %740-        14650600 C  0067:1
                         END;  %                                            %740-        14650800 C  0068:1
                                                                                                     14650400
                       DI←X;  SI←SI+1;  DS←7 CHR  );  %                     %740-        14651000 P  0068:1
                    DS ← 2 LIT "←";  %                                      %740-        14654000 P  0069:1
              END OF STREAM;  %                                             %740-        14655000 P  0069:3
                                                                                                     14646000
              TERMINATE(P1MIX); TERMINALMESSAGE(("-CODE"));%                                 14658000 T  0070:0
DISKSPACE:OPEN:CLOSE: GO TO INITIATE;%                                                       14659000 T  0071:3
 $ SET OMIT = DATACOM                                                                        14660499 T  0072:1
 SEEKDC:READC:READSOUGHT:DCBUFRLS:DCWRITER:FINDBUF:COBOLDCWR:                                14660500 T  0072:1
              GO INITIATE;                                                                   14660525 T  0072:1
 $ POP OMIT                                                                                  14660526 T  0072:3
 $ SET OMIT = NOT(DATACOM)                                                                   14660999 T  0072:3
              GO INITIATE;      ;;                                                         14670600 T  0072:3
PURGELOCK:  SAVEWORD ← SAVEWORD OR TWO(ROW);   % RDATA USED TO FOLLOW                        14671000 P  0073:1
            GO TO RDATA;  ;;  % SPACE NEEDS TO BE ON WORD BOUNDARY %740-                    14673000 P  0075:3
SPACE:      FIB←M[P(,TANK,LOD),[33:15]-3]; LOC←FIB[15],[25:5];%                            14675000 T  0081:0
            BLASTQ(LOC);%                                                                  14676000 T  0085:1
            FPB←[MEMORY[5]]&3[23:46:2]&ROW[22:1:1];%                                       14677000 T  0086:0
            ROW←ABS(ROW);%                                                                 14678000 T  0089:1
            WHILE (ROW←ROW-1)≥0 DO INFO←WAITIO(FPB,@40,LOC);%                              14679000 T  0090:1
              GO TO INITIATE;      ;;                                                      14680000 T  0095:0
REFILL:     FIB←M[(TANK←P(,TANK,LOD),[33:15])-3];%                                         14681000 T  0095:2
            CODE←FIB[13],[10:9]-1;%                                                        14682000 T  0099:1
            LOC←FIB[19],[33:15]-FIB[16],[33:15];%                                          14683000 T  0101:1
            FPB←MEMORY[FIB[16] INX 0+ROW];%                                                14684000 T  0104:0
            INFO←FPB.[18:15];%                                                             14685000 T  0106:3
            FOR I←1 STEP 1 UNTIL CODE DO%                                                  14686000 T  0108:1
```

```
                BEGIN IOREQUEST(FLAG(FIB[19]&(INFO+LOC)[33:33:15]),%                14687000 T  0109:0
                            FIB[16]&INFO[33:33:15],FPB);%                           14688000 T  0111:0
                      MEMORY[TANK]←MEMORY[TANK]&0[2:2:1]&0[19:19:1]%                14689000 T  0112:3
                                  &0[26:26:7]&INFO[33:33:15];%                      14690000 T  0115:3
                      STREAM(CODE,T←MEMORY[TANK],TANK);%                            14691000 T  0118:2
                      BEGIN SI←TANK; SI←SI+8; DS←CODE WDS;%                         14692000 T  0120:2
                            SI←LOC T; DS←WDS;%                                      14693000 T  0121:2
                      END;%                                                         14694000 T  0122:0
                                                                                                  14692000
                      INFO←MEMORY[INFO+ROW].[18:15];%                               14695000 T  0122:1
                END;%                                                               14696000 T  0124:3
                                                                                                  14687000
                       GO TO INITIATE;     ;;                                       14697000 T  0127:0
READLABEL:      FIB←M[(TANK←P(.TANK,LOD).[33:15])-3];%                              14698000 T  0127:2
                LOC←FIB[15].[25:5];%                                                14699000 T  0131:1
                BLASTQ(LOC);%                                                       14700000 T  0132:3
                P(WAIT)O((FIB[5].[44:1]x(M[TANK-2].[8:10]-1) INX M[TANK-2])         14701000 T  0133:2
                        &M[TANK][21:21:4],@37700000,LOC),DEL);                      14702000 T  0138:1
                STREAM(Y:=0;X:=0,X1:=0,X2:=0,Z:=M[TANK-2]);                         14702025 T  0142:0
                  BEGIN  DI:=LOC X; DS:=24 LIT "VOL1HDR1HDR2E0F1E0F2E0V1";          14702050 T  0145:1
                         DI:=LOC X;                                                 14702100 T  0148:3
                         6(TALLY:=TALLY+1;                                          14702150 T  0149:0
                         SI:=Z;                                                     14702200 T  0149:2
                         IF 4 SC=DC THEN                                            14702250 T  0149:3
                         JUMP OUT TO A);                                            14702300 T  0150:1
                         TALLY:=0;                                                  14702350 T  0151:0
                  A:                                                                14702400 T  0151:1
                         Y:=TALLY;                                                  14702450 T  0151:1
                  END;                                                              14702500 T  0151:2
                                                                                                  14702050
                IF (USASI:=P)>0 THEN                                                14702550 T  0151:3
                         IF (USASI:=P)>0 THEN                                       14702550 T  0151:3
                         USASITAPE(M[TANK-2].[CF],USASI,3,LOC,FIB[5].[44:1]);       14702600 T  0152:3
                         P(WAIT)O([M[5]]&3[23:46:2]&(NOT FIB[5])[22:44:1],           14703000 T  0157:2
                                 @37700000,LOC),DEL);                               14703100 T  0161:0
                               GO TO INITIATE;     ;;                             14704000 T  0162:0
IOREQ:                 FPB←MEMORY[(IF (INFO←NFLAG(MEMORY[P(TANK,DUP,[M],INX,PRL)]))  14705000 T  0162:2
                                .[22:1] THEN 2 ELSE NOT 1) INX INFO];%              14706000 T  0165:1
                IOREQUEST(FINAL,INFO,FPB);%                                         14707000 T  0170:0
                MEMORY[TANK]←MEMORY[TANK]&0[26:26:7]&0[19:47:1];%                   14708000 T  0171:3
                GO TO INITIATE;%                                                    14709000 T  0176:0
 $ SET OMIT = NOT(DATACOM )                                                         14709099 T  0176:2
;;                                                                                  14709300 T  0176:2
ROTATE:                TANK←P(.TANK,LOD).[33:15];%                                  14710000 T  0176:2
                STREAM(T←M[TANK],N←ROW-1,D←TANK);%                                  14711000 T  0178:2
                BEGIN SI←D; SI←SI+8; DS←N WDS; SI←LOC T; DS←WDS END;%               14712000 T  0181:0
                                                                                                  14712000
IF M[TANK].[3:5]=16 THEN                                                            14712100 T  0182:3
IF M[TANK].[24:1] THEN                                                              14712200 T  0184:3
IF (I←P(M[TANK-3],14,COC))≠0 THEN                                                   14712300 T  0186:3
    BEGIN                                                                           14712350 T  0190:1
    PHYL ← TANK INX M;                                                              14712400 T  0190:3
    FOR LOC ← ROW-1 STEP -1 UNTIL 0 DO                                              14712450 T  0192:0
         BEGIN                                                                      14712500 T  0196:1
         INFO ← NFLAG(PHYL[LOC]);    %[19:2]=0  THEN I/O IN-PROCESS                 14712510 T  0196:1
         IF (B←M[INFO INX NOT(2+(INFO.[19:2]=0))])≠0 THEN                           14712550 T  0198:0
           BEGIN                                                                    14712600 T  0202:1
 $ SET OMIT = NOT(DATACOM )                                                         14712649 T  0202:3
           IF (I←I-1) ≤ 0 THEN                                                      14712750 T  0202:3
```

```
                    LOC ← -1;
                END;

            END;

        END;

          GO TO INITIATE;%
END COM11;%
```

```
14712800 T  0204:2
14712850 T  0206:0
                    14712600
14712900 T  0206:0
                    14712500
14712950 T  0208:0
                    14712350
14713000 T  0208:0
14714000 T  0208:2
                    14624000
          SIZE= 0209 WORDS
```

```
                $ SET OMIT = NOT(DATACOM )
                PROCEDURE DISPLAY(X); VALUE X; REAL X;%                                                14715000 T  0000:0
                                                                                                       15019000 T  0000:0
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00446
PRT(623) = DISPLAY
                        BEGIN REAL T;                                                                  15020000 T  0000:0
STACK(F+1) = T
                             STREAM(X:J←JARROW[P1MIX],P1MIX,%                                          15021000 T  0000:0
                                  Y ←T←SPACE(25))%;                                                    15022000 T  0001:3
                                  BEGIN DS ← LIT "#";%                                                 15023000 T  0004:1
                                       2(SI ← J; SI ← SI+1; DS ← 7 CHR; J ← SI;%                       15024000 T  0004:3
                                  L:        SI ← SI-1;%                                               15025000 T  0006:0
                                            IF SC = " " THEN%                                         15026000 T  0006:1
                                                 BEGIN DI ← DI-1; GO TO L END;%                       15027000 T  0006:3
                                                                                                                  15027000
                                            DS ← LIT "/";);%                                          15028000 T  0007:1
                                       DI ← DI-1; DS ← LIT "=";%                                      15029000 T  0008:0
                                  SI←LOC P1MIX; DS←2DEC; P1MIX←DI; DI←DI-2;                           15030000 T  0008:3
                                  DS←FILL; DI←P1MIX; DS←2LIT"; ";                                     15030500 T  0009:3
                                       SI ← X;%                                                       15031000 T  0010:3
                                  H:   4(40(IF SC="←" THEN JUMP OUT 2 TO HH;                          15032000 T  0011:0
                                       DS←CHR)); HH:                                                  15033000 T  0012:3
                                       J ← DI; DI ← DI+8; SI ← J;%                                    15034000 T  0013:2
                                  S:   SI ← SI-1; IF SC = " " THEN GO TO S;%                          15035000 T  0014:1
                                       SI ← SI+1; J ← SI; DI ← J; DS ← LIT "←";%                      15036000 T  0015:1
                                       X← DI;                                                         15037000 T  0016:2
                                  END;%                                                               15038000 T  0016:3
                                                                                                                  15023000
                             X← (((X←P) INX 0) -T)×8+X,[30:3]-1;                                      15039000 T  0017:0
                             SPOUT(P(X,T));                                                           15040000 T  0021:0
                        END;%                                                                         15041000 T  0022:2
                                                                                                                  15020000
                                                                                                 SIZE= 0023 WORDS
```

```
                    PROCEDURE  COM13 ;%                                                                  15060000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00447
                         BEGIN%                                                                         15061000 T  0000:0
                    %    COBOL  IO  INTERFACE COMMUNICATE%                                              15062000 T  0000:0
                         REAL  CODE = -4, REEL = -6 ;%                                                  15063000 T  0000:0
STACK(F-4) = CODE
STACK(F-6) = REEL
                         NAME  FLOC = -5 ;%                                                             15064000 T  0000:0
STACK(F-5) = FLOC
                         ARRAY FIB [*];%                                                                15065000 T  0000:0
STACK(F+1) = FIB
                         REAL T, COB68;                                                                 15066000 T  0000:0
STACK(F+2) = T
STACK(F+3) = COB68
                         LABEL L0,L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,%                   15067000 T  0000:0
                               L16,L17;%                                                                15068000 T  0000:0
                         SWITCH  TYPE ← L0,L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,%                         15069000 T  0000:0
                                      L12,L13,L14,L15,L16,L17;%                                         15070000 T  0000:0
                         DEFINE INOUT=FIB[13].[27:1]#,DIREC=FIB[13].[25:1]#,%                           15071000 T  0000:0
                              SORTFILE=FIB[4].[7:1]#,LABELSOMITTED=FIB[4].[2:1]#;%                      15072000 T  0000:0
                         COB68 ← (FIB ← *(FLOC)).[8:10] = 22;                                           15073000 T  0000:0
                         GO TO TYPE[CODE];%                                                             15074000 T  0003:1
                    L0:%                                                                                15075000 T  0013:1
                         DO UNTIL FALSE;%                                                               15076000 T  0013:1
                    L1:%                                                                                15077000 T  0014:0
                    L2:%                                                                                15078000 T  0014:0
                    L3:%                                                                                15079000 T  0014:0
                         INOUT←CODE≠3;  DIREC← CODE=2;%                                                 15080000 T  0014:0
                         IF NOT COB68 THEN                                                              15080900 T  0020:0
                         IF FIB[5].[46:2]=3 THEN BEGIN%                                                 15081000 T  0020:2
                         FIB[18].[18:15]←FIB[18].[3:15];%                                               15082000 T  0023:0
                         IF CODE=3 THEN                                                                 15082100 T  0025:3
                         FIB[18].[3:15]←FIB[18].[33:15]+FIB[18].[3:15]; END;%                           15083000 T  0026:2
                                                                                                                     15081000
                         NT1:=FLOC INX 3;                                                               15084000 T  0031:2
                         P(0,STF,PRT[P1MIX,8],STS);                                                     15085000 T  0032:3
                         FILEOPEN(1,NT1);                                                               15086000 T  0035:0
                    L16:%                                                                               15088000 T  0036:0
                    L17:%                                                                               15089000 T  0036:0
                         DO UNTIL FALSE;%                                                               15090000 T  0036:0
                    L5:  L6:L7:L8:L9:L10:L11:L12:L13:L14:L15:%                                          15091000 T  0036:3
                         DO UNTIL FALSE;%                                                               15092000 T  0036:3
                    L4:%                                                                                15093000 T  0037:2
                         CODE ← IF (CODE←ABS(REEL))=0 THEN 6 ELSE%                                      15094000 T  0037:2
                                   (IF CODE=1 THEN 7 ELSE%                                              15095000 T  0040:1
                              (IF CODE=2 THEN 10 ELSE%                                                  15096000 T  0042:1
                              (IF CODE=4 THEN @22 ELSE                                  %KRUNCH         15097000 T  0044:1
                              (IF CODE=64 THEN @52 ELSE 0))));                          %KRUNCH         15097500 T  0046:1
                         IF (T←FIB[4].[8:4])≠2 AND T≠4 AND T≠8 THEN CODE←0;%                            15098000 T  0049:0
                         IF T=4 AND  CODE=0 THEN CODE←10  ;%                                            15099000 T  0054:1
                         FILECLOSE(( FLOC INX 3 )& CODE[18:33:15]);%                                    15100000 T  0057:1
                         IF CODE=0 OR CODE=10 OR CODE=@22 THEN FIB[5].[42:1]←1                          15101000 T  0059:0
                              ELSE FIB[5].[40:2]←(CODE=7)×2+1;%                                         15102000 T  0062:3
                         IF NOT COB68 THEN                                                              15102900 T  0069:1
                         IF FIB[5].[46:2]=3 THEN BEGIN%                                                 15103000 T  0069:3
                         FIB[18].[3:15]←FIB[18].[18:15];FIB[18].[18:15]←0 END;%                         15104000 T  0072:1
                                                                                                                     15103000
```

```
GO TO INITIATE;%
END  COM13;%
```

```
15105000 T  0077:2
15106000 T  0078:0
                    15061000
          SIZE= 0079 WORDS
```

```
                PROCEDURE REELCHANGER(U);                                                    15110000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00450
PRT(624) = REELCHANGER
                VALUE U; REAL U;                                                             15110100 T  0000:0
                %                                                                            15110200 T  0000:0
                %    THE PURPOSE OF THIS ROUTINE IS TO ALLOW REEL CHANGE FOR                 15110300 T  0000:0
                %    OUTPUT TAPE FILES BY OPERATOR REQUEST. THIS ROUTINE IS                  15110400 T  0000:0
                %    INITIATED FROM THE SPO WITH A KEYBOARD INPUT REQUEST OF                 15110500 T  0000:0
                %    "RC" FOLLOWED BY A THREE CHARACTER TAPE UNIT IDENTIFIER.                15110600 T  0000:0
                %                                                                            15110700 T  0000:0
                %    IF THE WRITEPARITYREELSWITCH ROUTINE IS RUNNING                         15110800 T  0000:0
                %    CONCURRENTLY WHEN THE "RC" MESSAGE IS RECEIVED,                         15110900 T  0000:0
                %    THEN THIS ROUTINE WILL ABORT. OTHERWISE IT WILL                         15111000 T  0000:0
                %    CALL WRITEPARITYREELSWITCH IN ORDER TO AFFECT THE                       15111100 T  0000:0
                %    NECESSARY REEL CHANGE.                                                  15111200 T  0000:0
                %                                                                            15111300 T  0000:0
                %    THE PARAMETER IS USED AS FOLLOWS:                                       15111400 T  0000:0
                %       U          THE LOGICAL UNIT NUMBER OF THE TAPE UNIT TO SWITCH        15111500 T  0000:0
                %                                                                            15111600 T  0000:0
                BEGIN                                                                        15111700 T  0000:0
                    REAL RCW=+0, MKSW=-2;                                                    15111800 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MKSW
                    REAL MIX,TOPIOD,T2;                                                      15111900 T  0000:0
STACK(F+1) = MIX
STACK(F+2) = TOPIOD
STACK(F+3) = T2
                %                                                                            15112000 T  0000:0
                %    THE LOCAL VARIABLES ARE USED AS FOLLOWS:                                15112100 T  0000:0
                %    REALS                                                                   15112200 T  0000:0
                %       MIX         MIX INDEX OF JOB USING TAPE UNIT U                       15112300 T  0000:0
                %       TOPIOD      LOCATION OF TOP I/O DESCRIPTOR IN TANK                   15112400 T  0000:0
                %       T2          TEMPORARY                                                15112500 T  0000:0
                %                                                                            15112600 T  0000:0
                    LABEL RESETJAR,ERROROUT,EXIT;                                            15112700 T  0000:0
                 $ SET OMIT = NOT(PACKETS)                                                   15112800 T  0000:0
                    DEFINE UNITNO = PSEUDOMIX[MIX]#;                                         15112900 T  0000:0
                 $ POP OMIT                                                                  15113000 T  0000:0
                    MIX ← RDCTABLE[U].[8:6];                                                 15113100 T  0000:0
                    TOPIOD ← PRNTABLE[U].[15:15];                                            15113200 T  0002:1
                    IF (MIX=0) OR (TOPIOD=0) OR TERMSET(MIX) THEN GO ERROROUT;               15113300 T  0003:3
                    JAR[MIX,9] ← (*P(DUP)) & 1[1:47:1];                                      15113400 T  0008:0
                    IF JAR[MIX,9].SYSJOBF = LIBMAINCODE THEN                                 15113500 T  0011:0
                    BEGIN                                                                    15113700 T  0013:0
                        STREAM(A←TINU[U], T←T2←SPACE(4));                                    15113800 T  0013:2
                        BEGIN                                                                15113900 T  0016:3
                            DS ← 23 LIT"#REEL CHANGE MARKED ON ";                            15114000 T  0016:3
                            SI ← LOC A; SI ← SI+5; DS ← 3 CHR; DS ← LIT"←";                  15114100 T  0020:0
                        END;                                                                 15114200 T  0021:1
                                                                                                        15113900
                        SPOUTER(T2,UNITNO,1);                                                15114300 T  0021:2
                        GO EXIT;                                                             15114400 T  0023:0
                    END;                                                                     15114500 T  0023:2
                                                                                                        15113700
                    IF NOTERMSET(MIX) THEN PRTROW[MIX].[PSF] ← 2;                            15114600 T  0023:2
                    COMPLEXSLEEP(NOT(STOPSET(MIX)) AND UNIT[U].[FF]=@77777);                 15114700 T  0028:0
14582000    ACCIDENTAL ENTRY AT @77777
```

```
     % IF UNIT NOT ASSIGNED AT THIS POINT THEN                                  15114800 T  0036:1
     % WRITEPARITYREELSWITCH HAS ALREADY BEEN RUN.                              15114900 T  0036:1
     IF RDCTABLE[U].[8:6]=0 OR TERMSET(MIX) THEN GO RESETJAR;                   15115000 T  0036:1
     T2←NFLAG(M[TOPIOD])&TINU[U][3:3:5];                                        15115100 T  0040:1
     P(WRITEPARITYREELSWITCH(T2,1),DEL);                                        15115200 T  0043:1
RESETJAR:                                                                       15115300 T  0044:2
     IF NOTERMSET(MIX) THEN JAR[MIX,9] ← (*P(DUP)) & 0[1:47:1];                 15115400 T  0044:2
     GO EXIT;                                                                   15115500 T  0049:2
ERROROUT:                                                                       15115600 T  0051:0
     STREAM(T←T2←SPACE(3));                                                     15115700 T  0051:0
          DS ← 21 LIT"#REEL CHANGE ABORTED←";                                   15115800 T  0053:3
     SPOUTER(T2,UNITNO,1);                                                      15115900 T  0057:0
EXIT:                                                                           15116000 T  0058:2
     KILL([MKSW]);                                                              15116100 T  0058:2
END REELCHANGER;                                                                15116200 T  0059:1
                                                                                          15111700
                                                                              SIZE= 0060 WORDS
```

```
                    BOOLEAN PROCEDURE CONQUER(C,N,L,S,G);                                                    15168000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00452
PRT(625) = CONQUER
                    VALUE C,N,L,S,G;                                                                         15168100 T  0000:0
                          REAL C,N,L; ARRAY S[*];%                                                           15169000 T  0000:0
                    INTEGER G;                                                                               15169100 T  0000:0
                          BEGIN ARRAY B=C[*];%                                                               15170000 T  0000:0
STACK(F-5) = B
                               REAL T,I=T;%                                                                  15171000 T  0000:0

STACK(F+2) = T
STACK(F+2) = I

                               LABEL X;%                                                                     15172000 T  0000:0
                                    IF G THEN                                                                15172500 T  0000:0
                               IF N*L > 512 THEN GO TO X;%                                                   15173000 T  0000:3
                               IF (T ← GETSPACE(N*L,2,3)) = 0 THEN%                                          15174000 T  0003:0
                                    BEGIN IF NOT G THEN P(0,RTN);                                            15175000 T  0005:3
                               X:   IF NOT N THEN                                                            15175900 T  0007:3
                                         BEGIN G←CONQUER(C,N←N DIV 2,L,N INX S,1);                           15176000 T  0008:1
                                               G←CONQUER(S INX N,N,L,S,1);                                   15177000 T  0012:3
                                               P(1,RTN);                                                     15177800 T  0016:0
                                             P(X[T]);%                                                       15178000 T  0016:2
                                         END;%                                                               15179000 T  0016:3
                                                                                                                      15176000
                                    T ← GETSPACE(L,2,1);%                                                    15180000 T  0016:3
                               END;%                                                                         15181000 T  0018:2
                                                                                                                      15175000
                               B ← [M[T+2]]&L[8:38:10]&C[18:33:15];%                                         15182000 T  0018:2
                               N ← N-1;%                                                                     15183000 T  0021:3
                               FOR I ← 0 STEP 1 UNTIL N DO%                                                  15184000 T  0023:0
                                    BEGIN S[I] ← B;%                                                         15185000 T  0024:0
                                          B ← L INX B;%                                                      15186000 T  0025:2
                                    END;%                                                                    15187000 T  0027:0
                                                                                                                      15185000
                               CONQUER←1;                                                                    15187500 T  0029:1
                    END;%                                                                                    15188000 T  0030:0
                                                                                                                      15170000
                                                                                                                SIZE= 0031 WORDS
```

```
                BOOLEAN PROCEDURE PRTGAMES(BUFF,MIX); VALUE BUFF,MIX; REAL BUFF,MIX;                15400000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00454
PRT(626) = PRTGAMES
                    COMMENT PRTGAMES IS THE BUSINESS END OF "IN" OR "OT" MESSAGES;                  15401000 T  0000:0
                    BEGIN REAL NX,INDEX,DATA;                                                       15402000 T  0000:0
STACK(F+2) = NX
STACK(F+3) = INDEX
STACK(F+4) = DATA
                $ SET OMIT = NOT(PACKETS)                                                           15402499 T  0000:0
                      DEFINE UNITNO = PSEUDOMIX[MIX]#;                                              15402500 T  0000:0
                $ POP OMIT                                                                          15402501 T  0000:0
                      LABEL ECH, X;;;                                                               15403000 T  0000:0
                      STREAM(BUFF,G←MIX=63,F←BUFF<0,D←[DATA],I←[INDEX]);%       %844-             15404000 P  0001:0
                      BEGIN SI←BUFF;                                                                15405000 T  0003:3
                      L:   IF SC=" " THEN BEGIN SI←SI+1; GO L END;                                  15406000 T  0004:0
                                                                                                                  15406000
                          G(IF SC≠" " THEN IF SC≠"←" THEN IF SC≠"=" THEN        %844-             15406100 C  0005:0
                            BEGIN TALLY←TALLY+1; SI←SI+1 END);                  %844-             15406200 C  0007:0
                                                                                                                  15406200
                           4(IF SC≠" " THEN IF SC≠"←" THEN IF SC≠"=" THEN                           15407000 T  0007:3
                             BEGIN TALLY←TALLY+1; SI←SI+1 END);                                     15408000 T  0009:2
                                                                                                                  15408000
                           I←TALLY; DI←DI+8; DI←DI-I; SI←SI-I; DS←I CHR;                            15409000 T  0010:1
                           F(                                                                       15410000 T  0012:1
                      M:     IF SC=" " THEN BEGIN SI←SI+1; GO M END;                               15411000 T  0012:3
                                                                                                                  15411000
                             IF SC≠"=" THEN BEGIN E:DI←DI-1;DS←LIT"""";JUMP OUT END;                15412000 T  0013:3
                                                                                                                  15412000
                             SI←SI+1;                                                               15413000 T  0015:2
                      N:     IF SC=" " THEN BEGIN SI←SI+1; GO N END; TALLY←0;                       15414000 T  0015:3
                                                                                                                  15414000
                           8(IF SC≥"0" THEN BEGIN TALLY←TALLY+1; SI←SI+1 END                        15415000 T  0017:0
                                                                                                                  15415000
                             ELSE JUMP OUT); IF SC≠" " THEN IF SC≠"←" THEN GO E;                    15416000 T  0018:1
                           I←TALLY; DI←D; SI←SI-I; DS←I OCT);                                       15417000 T  0020:2
                END; IF MIX≠63 THEN BEGIN % NOT ABSOLUTE CORE ADDRESS        %844-                  15418000 P  0022:1
                                                                                                                  15405000
                IF (INDEX AND NOT #1070707)≠0 THEN GO ECH;                   %844-                  15418500 C  0023:3
                IF JARROW[MIX]=0 THEN GO ECH;                                                       15419000 T  0025:3
                IF (NX←INDEX.[45:3]&INDEX[42:39:3]&INDEX[39:33:3]&INDEX[38:29:1                     15420000 T  0027:1
                                                 ])≤20 THEN GO ECH;                                 15421000 T  0030:1
                IF (PRTROW[MIX] INX NX)>M[PRT[MIX,10],MOM-3],[CF] THEN GO ECH;                      15422000 T  0032:2
                IF BUFF<0 THEN                                                                      15423000 T  0037:2
                     IF P(PRT[MIX,NX],TOP,XCH,DEL) THEN PRT[MIX,NX]←DATA ELSE                       15424000 T  0038:1
                        GO ECH ELSE                                                                 15425000 T  0042:3
                     BEGIN; STREAM(J←JARROW[MIX],MIX,INDEX,R←[PRT[MIX,NX]],                         15426000 T  0042:3
                            D← DATA← BUFF.[15:15]-1);                                               15427000 T  0047:1
                          BEGIN SI←J;  SI←SI+1;  DS←LIT" ";%                          %WF           15428000 T  0049:1
                                DS←7 CHR;  DS←LIT"/";  SI←SI+1;%                      %WF           15428100 T  0050:1
                                DS←7CHR; DS←LIT"="; SI←LOC MIX; DS←2DEC;                            15429000 T  0051:1
                                MIX←DI; DI←DI-2; DS←FILL; DI←MIX;                                   15429500 T  0052:2
                                DS←3LIT"!R+"; SI←SI+4; DS←4 CHR; D←DI; DI←DI-4;                     15430000 T  0053:2
                                DS←3 FILL; DI←D; DS←LIT"="; SI←R;                                   15431000 T  0055:1
                                IF SB THEN % DESCRIPTOR:TYPE OCTAL                                  15432000 T  0056:2
                                  16(DS←3 RESET; 3(IF SB THEN DS←SET ELSE DS←                       15433000 T  0057:0
                                                   RESET; SKIP SB)) ELSE                            15434000 T  0058:3
                                  DS←8 DEC;                                                         15435000 T  0060:0
```

```
                    DS←LIT"←"; DI←D; DI←DI+1; DS←7 FILL;                                15436000 T  0060:1
               END;                                                                     15437000 T  0061:2
                                                                                                    15428000
               SPOUTER(DATA INX M[BUFF.[15:15]-2],UNITNO,1);                            15437100 T  0061:3
          END; %                                                          %844-         15438000 P  0065:2
                                                                                                    15426000
     END ELSE BEGIN % ABSOLUTE CORE ADDRESS OUTPUT REQUIRED               %844-         15438010 C  0065:2
                                                                                                    15418000
          IF (INDEX AND NOT @707070707)≠0 THEN GO ECH ELSE                %844-         15438020 C  0066:0
          BEGIN %                                                         %844-         15438030 C  0067:2
               NX←INDEX.[45:3]&INDEX[42:39:3]&INDEX[39:33:3]              %844-         15438040 C  0068:0
                  &INDEX[36:27:3]&INDEX[33:21:3];%                        %844-         15438050 C  0070:0
               STREAM(INDEX,R←NX,D←DATA←BUFF.[15:15]-1);%                 %844-         15438060 C  0073:1
               BEGIN DS←15 LIT" CORE LOCATION "; SI←LOC INDEX;%           %844-         15438070 C  0076:0
                    SI←SI+3; DS←5 CHR; D←DI; DI←DI-5; DS←4 FILL;%                        15438080 C  0078:2
                    DI←D; DS←LIT"="; SI←R;%                               %844-         15438090 C  0079:3
                    16(DS←3 RESET; 3(IF SB THEN DS←SET ELSE               %844-         15438105 C  0080:3
                       DS←RESET; SKIP SB));                               %844-         15438120 C  0082:2
                    DS←LIT"←"; DI←D; DI←DI+1; DS←15 FILL;                 %844-         15438130 C  0083:2
               END;%                                                      %844-         15438140 C  0084:3
                                                                                                    15438070
               SPOUT(DATA INX M[BUFF.[15:15]-2]);%                        %844-         15438150 C  0085:0
          END %                                                           %844-         15438160 C  0088:2
                                                                                                    15438030
     END; GO X; %                                                         %844-         15438170 C  0088:2
                                                                                                    15438010
ECH: PRTGAMES←1;                                                                        15439000 T  0090:0
X:   END;                                                                               15440000 T  0090:3
                                                                                                    15402000
                                                                                    SIZE= 0092 WORDS
```

```
                $ SET OMIT = NOT(DCLOG AND DATACOM )                                                    15440999 T  0000:0
              PROCEDURE WHATMCP(BUFF); REAL BUFF; % FORMATS WM MESSAGE                                  15500000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00458
PRT(627) = WHATMCP
                BEGIN REAL X;                                                                         15501000 T  0000:0
STACK(F+1) = X
                    DEFINE BUFFSIZE=36#; % INCREASE THIS WITH MORE OPTIONS                            15501100 T  0000:0
                  X:=(BUFF:=SPACE(BUFFSIZE+30))+BUFFSIZE;                                             15501200 T  0000:0
                  DISKWAIT(-X,30,MCPNAMESEG);                                                         15501300 T  0004:1
                  STREAM(ML:=MARKLEVEL,PL:=PATCHLEVEL,LL:=LOCALEVEL                                   15501500 T  0006:1
                    ,N:=X+20+2*SYSNO,A:=BUFF);                                                        15501600 T  0007:1
                  BEGIN DS←LIT" "; SI←N; SI←SI+1; DS←7 CHR; DS←LIT"/";                                15502000 T  0009:2
                    SI←SI+1; DS←7 CHR; DS←6 LIT" MARK ";                                              15502100 T  0011:1
                    SI:=LOC ML; IF SC GEQ " " THEN;                                                   15502200 T  0012:3
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                             15502300 T  0013:2
                      ELSE DS:=CHR); DS:=LIT",";                                                      15502400 T  0015:1
                    SI:=LOC PL; IF SC GEQ " " THEN;                                                   15502500 T  0016:2
                    6(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                             15502600 T  0017:1
                      ELSE DS:=CHR); DS:=2CHR;                                                        15502700 T  0019:0
                    SI:=LOC LL; IF SC GEQ " " THEN;                                                   15502800 T  0020:0
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                             15502900 T  0020:3
                      ELSE DS:=CHR);                                                                  15503000 T  0022:2
                    DS ← 10 LIT " INCLUDES ";%                                                        15504000 T  0023:1
                $ SET OMIT = NOT(AUTODUMP)                                                            15504999 T  0024:3
                    DS ←  9 LIT "AUTODUMP,";                                                          15505000 T  0024:3
                $ POP OMIT                                                                            15505001 T  0026:1
                $ SET OMIT = NOT(AUXMEM)                                                              15505499 T  0026:1
                $ SET OMIT = NOT(BREAKOUT)                                                            15505999 T  0026:1
                $ SET OMIT = NOT(B6500LOAD)                                                           15506499 T  0026:1
                $ SET OMIT = NOT(CHECKLINK OR DEBUGGING)                                              15506999 T  0026:1
                $ SET OMIT = NOT(DATACOM)                                                             15507499 T  0026:1
                $ SET OMIT = NOT(DCLOG AND DATACOM)                                                   15507999 T  0026:1
                $ SET OMIT = NOT(DCSPO AND DATACOM)                                                   15508499 T  0026:1
                $ SET OMIT = NOT(DEBUGGING)                                                           15508999 T  0026:1
                $ SET OMIT = NOT(DFX)                                                                 15509499 T  0026:1
                $ SET OMIT = NOT(DISKLOG)                                                             15509999 T  0026:1
                $ SET OMIT = NOT(DKBNODFX)                                                            15510499 T  0026:1
                $ SET OMIT = NOT(DUMP OR DEBUGGING)                                                   15510999 T  0026:1
                    DS ←  5 LIT "DUMP,";                                                              15511000 T  0026:1
                $ POP OMIT                                                                            15511001 T  0027:1
                $ SET OMIT = NOT(MONITOR)                                                             15511499 T  0027:1
                $ SET OMIT = NOT(NEWLOGGING)                                                          15511999 T  0027:1
                $ SET OMIT = NOT(PACKETS)                                                             15512499 T  0027:1
                    DS ←  8 LIT "PACKETS,";                                                           15512500 T  0027:1
                $ POP OMIT                                                                            15512501 T  0028:2
                $ SET OMIT = NOT(RJE AND DATACOM)                                                     15512999 T  0028:2
                $ SET OMIT = NOT(SAVERESULTS)                                                         15513499 T  0028:2
                $ SET OMIT = NOT(SEPTICTANK)                                                          15513999 T  0028:2
                $ SET OMIT = NOT(SHAREDISK)                                                           15514499 T  0028:2
                $ SET OMIT = NOT(STATISTICS)                                                          15514999 T  0028:2
                $ SET OMIT = NOT(WORKSET)                                                             15515499 T  0028:2
                    DS ←  8 LIT "WORKSET,";                                                           15515500 T  0028:2
                $ POP OMIT                                                                            15515501 T  0029:3
                $ SET OMIT = NOT(WORKSETMONITOR)                                                      15515999 T  0029:3
                    DS ← 15 LIT "WORKSETMONITOR,";                                                    15516000 T  0029:3
                $ POP OMIT                                                                            15516001 T  0032:0
                    DI ← DI-1;                                                                        15523000 T  0032:0
```

```
     A← DI;
     SI← A;     DI← A;
     IF SC≠"," THEN
          DI← DI- 9;
     DS← LIT "←"
     END;

IF M[3].[1:1] THEN % CM HAS BEEN DONE
BEGIN DISKWAIT(-X,30,0);
     STREAM(N←X+10+5×SYSNO,BUFF);
     BEGIN SI←BUFF; SI←SI+16;
     L:   IF SC NEQ "←" THEN BEGIN SI←SI+1; GO L; END;

          BUFF←SI; DI←BUFF;
          DS←18 LIT""NEXT MCP WILL BE ";
          SI←N; SI←SI+1; DS←7 CHR; DS←LIT"/";
          SI←SI+1; DS←7 CHR; DS←LIT"←";
END; END;


END WHATMCP;
```

```
15524000 T  003211
15525000 T  003212
15526000 T  003310
15527000 T  003312
15528000 T  003313
15530000 T  003411
                    15502000
15531000 T  003412
15531100 T  003610
15531200 T  003810
15531300 T  004012
15531400 T  004110
                    15531400
15531500 T  004210
15531600 T  004212
15531700 T  004510
15531800 T  004611
15531900 T  004711
                    15531300
                    15531100
15533000 T  004712
                    15501000
                SIZE= 0050 WORDS
```

```
                PROCEDURE WHATINTRNSIC(BUFF); VALUE BUFF; REAL BUFF;                                15534000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00460
                    BEGIN                                                                           15535000 T  0000:0
                    REAL SIZE,LOC,INTWORD,WI,I;                                                     15536000 T  0000:0
STACK(F+1) = SIZE
STACK(F+2) = LOC
STACK(F+3) = INTWORD
STACK(F+4) = WI
STACK(F+5) = I
                    LABEL EXIT;                                                                     15537000 T  0000:0
                    IF INTSIZE=0 THEN                                                               15539000 T  0000:0
                         BEGIN     ;                                                              15540000 T  0002:0
                         STREAM(BUFF);  DS+14 LIT "NO INTRINSICS+";                                 15541000 T  0002:2
                         GO EXIT;                                                                   15542000 T  0005:2
                         END;                                                                       15543000 T  0006:0
                                                                                                                 15540000
                    COMMENT MAKE WI INTRINSIC PRESENT;                                              15544000 T  0006:0
                    SIZE := (INTWORD:=INTRNSC[INTRNSC[0]]) INX 0;                                   15545000 T  0006:0
                    LOC := SPACE(SIZE);                                                             15546000 T  0008:1
                $ SET OMIT = NOT(AUXMEM)                                                            15547000 T  0010:2
                    DISKWAIT(-LOC,SIZE,INTWORD,[6:27]);                                             15548000 T  0010:2
                    DISKWAIT(-(I:=SPACE(30)),30,0);                                                 15549000 T  0012:2
                    STREAM(X:=I+13+5*SYSNO,LOK:=LOC,BUFF);                                          15550000 T  0016:0
                       BEGIN                                                                        15551000 T  0018:3
                       SI:=LOK; SI:=SI+8;                                                           15552000 T  0018:3
                       10(SI:=SI+1;                                                                 15552100 T  0019:1
                       7(IF SC="+" THEN JUMP OUT 2 TO L1;                                           15552200 T  0019:3
                         IF SC="@" THEN SI:=SI+1 ELSE DS:=CHR));                                    15552300 T  0021:1
                   L1: SI:=X;DS:=3LIT" (";                                                          15552400 T  0023:0
                       SI:=SI+1; DS:=7 CHR;DS:=LIT"/";                                              15552500 T  0024:0
                       SI:=SI+1; DS:=7 CHR;DS:=2LIT")+";                                            15552600 T  0025:0
                       END STREAM;                                                                  15552700 T  0026:0
                                                                                                                 15551000
                    FORGETSPACE(LOC); FORGETSPACE(I);                                           15552800 T  0026:1
                EXIT:                                                                           15554000 T  0027:3
                    END WHATINTRNSIC;                                                           15555000 T  0027:3
                                                                                                                 15535000
                                                                                                      SIZE= 0028 WORDS
```

```
                    PROCEDURE COREPRINT(Q); VALUE Q; REAL Q;                                    15600000 T  000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00461
PRT(630) = COREPRINT
                         COMMENT : THIS PROCEDURE COMPUTES AND TYPES THE AMOUNTS OF SAVE         15600050 T  000:0
                                   AND OVERLAYABLE CORE IN USE FOR A GIVEN MIX OR ALL MIXES;     15600100 T  000:0
                         COMMENT : Q.[1:1] = 1 IF ALL MIXES DESIRED                            15600120 T  000:0
                                   Q.[CF] = MIX, Q.[9:9] = REMOTE TU/BU;                       15600140 T  000:0
                         BEGIN REAL LINK,SIZE,D;%                                              15600300 T  000:0
STACK(F+1) = LINK
STACK(F+2) = SIZE
STACK(F+3) = D
                              ARRAY C[*];                                                      15600400 T  000:0
STACK(F+4) = C
                              INTEGER A,N;                                                     15600500 T  000:0
STACK(F+5) = A
STACK(F+6) = N
                              LABEL NXT;                                                       15600600 T  000:0
                              C ← [M[SPACE(MIXMAX+1)]] & (MIXMAX+1) [8:38:10];                 15600800 T  000:0
                              FOR A ← 0 STEP 1 UNTIL MIXMAX DO C[A] ← 0;%                      15600950 T  000:1
                              C[0].[FF] ← A ← MSTART;%                                         15601000 T  001:2
                         WHILE A≠0 DO                    % STEP THROUGH MEMORY LINKS           15601150 T  001:2
                              BEGIN IF (LINK ← M[A]).[1:1] THEN GO TO NXT;                     15601200 T  001:3
                                   SIZE ← LINK.[CF] - A;                                       15601400 T  001:2
                                   IF LINK.[2:1] THEN SIZE ← 0 & SIZE [CTF];% SAVE             15601500 T  001:1
                                   C[LINK.[9:6]] ← (*P(DUP)) + SIZE;%                          15601600 T  002:3
                              NXT: A ← LINK.[CF];%                                             15602200 T  002:1
                              END;%                                                            15602300 T  002:2
                                                                                                           15601200
                              A ← -1; WHILE (A←A+1) ≤ MIXMAX DO%                               15602400 T  002:0
                              BEGIN IF Q.[1:1] OR Q.[CF] = A THEN IF C[A] ≠ 0 THEN             15602500 T  002:1
                                   BEGIN; STREAM(N←N←C[A].[FF],D←[SIZE]);%                     15602600 T  003:0
                                        BEGIN SI ← LOC N; DS ← 8 DEC; END;%                    15602620 T  003:3
                                                                                                           15602620
                                        STREAM(N←N←C[A].[CF],D←[LINK]);%                       15602640 T  003:2
                                        BEGIN SI ← LOC N; DS ← 8 DEC; END;%                    15602660 T  003:3
                                                                                                           15602660
                                        JOBMESS(A,Q,":SAVE=",SIZE," OLAY=",LINK);%             15602680 T  003:2
                                   END;%                                                       15602690 T  004:2
                                                                                                           15602600
                              END;%                                                            15602700 T  004:2
                                                                                                           15602500
                              IF Q.[1:1] THEN% DO TOTAL                                        15603900 T  004:0
                              BEGIN P(C[0]);                                                   15604000 T  004:3
                                   FOR A←1 STEP 1 UNTIL MIXMAX DO P(C[A],ADD);%                15604100 T  004:3
                                   N ← P; N ← N.[FF] + N.[CF];%                                15604200 T  005:0
                                   STREAM(N,D←D←SPACE(4));%                                    15604250 T  005:3
                                   BEGIN SI ← LOC N; DS ← 18 LIT "TOTAL MEM IN USE= ";         15604275 T  005:3
                                        DS ← 5 DEC; DS ← LIT "←";                              15604300 T  005:2
                                        DI ← DI - 6; DS ← 4 FILL;%                             15604400 T  005:1
                                   END STREAM;                                                 15604500 T  005:3
                                                                                                           15604275
                                   SPOUT(D & Q[9:9:9]);%                                       15604600 T  006:0
                              END;                                                             15604700 T  006:1
                                                                                                           15604000
                              FORGETSPACE(C INX 0);                                            15604800 T  006:1
                         END COREPRINT;                                                        15604900 T  006:3
                                                                                                           15600300
```

SIZE= 0064 WORDS

```
                $ SET OMIT = NOT(AUXMEM)                                                    15604999 T  000010
                PROCEDURE LOGCOMMENT (Q); VALUE Q; REAL Q;                                  15610000 T  000010
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00464
PRT(631) = LOGCOMMENT
                    BEGIN                                                                   15611000 T  000010
                REAL      I,J,K,L;                                                          15612000 T  000010
STACK(F+1) = I
STACK(F+2) = J
STACK(F+3) = K
STACK(F+4) = L
                ARRAY     LOG[*];                                                           15613000 T  000010
STACK(F+5) = LOG
                          L ← SPACE(72);                                                    15614000 T  000010
                          STREAM (Q:D←L+5);                                                 15615000 T  000312
                          BEGIN  SI ← Q;                                                    15616000 T  000511
                          L:   IF SC≠"←" THEN BEGIN DS ← CHR; GO TO L; END;                 15617000 T  000512
                                                                                                        15617000
                               5(DS ← 8 LIT " ");  DI ← DI-32;  Q ← DI;                     15618000 T  000612
                          END;                                                              15619000 T  000813
                                                                                                        15616000
                          I ← P.[33:15]; LOG ← [M[L]] & (I=L+4)[8:38:10];                   15620000 T  000910
                          LOG[3] ← I ← I-L-5; % NUMBER OF WORDS IN COMMENT                  15621000 T  001311
                          WHILE (J:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;            15622000 T  001610
                                                                                                        15622000
                          LOG[2] ← DATE.[18:30];                                            15623000 T  002312
                          LOG[1] ← J;                                                       15624000 T  002511
                          LOG[0] ← 99;                                                      15625000 T  002612
                          LOGSPACE([LOG[0]],I+9);                                           15626000 T  002713
                          FORGETSPACE(LOG);                                                 15627000 T  002912
                    END;                                                                    15628000 T  003012
                                                                                                        15611000
                                                                                                SIZE= 0031 WORDS
```

```
                REAL PROCEDURE KEYINSCAN(KTR,MIX); REAL KTR,MIX;                                    16034900 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00466
PRT(632) = KEYINSCAN
                    BEGIN
                    REAL TYPE=+1, TBLADDR;                                                          16035000 T  0000:0
                                                                                                    16035100 T  0000:0
STACK(F+1) = TYPE
STACK(F+2) = TBLADDR
                    % SCANS INPUT BUFFER FROM SPO                                                   16035200 T  0000:0
                    % RETURNS ERROR FLAG IN MIX.[1:3] ...                                           16035300 T  0000:0
                    %   MIX.[1:1]=FLAG FOR EMPTY BUFFER (GROUP MARK ONLY)                           16035400 T  0000:0
                    %   MIX.[2:1]=FLAG FOR NO INFO AFTER MIX INDEX                                  16035500 T  0000:0
                    %   MIX.[3:1]=FLAG FOR QMARK (CC) INPUT AS FIRST CHARACTER                      16035600 T  0000:0
                    %   KTR IS INITIALLY THE ADDRESS OF SPO INPUT BUFFER                            16035700 T  0000:0
                    %   KTR IS ASSIGNED NEXT CHARACTER LOCATION AFTER SCAN                          16035800 T  0000:0
                    % TYPE.[CF] IS ASSIGNED TABLE LOCATION (MIXMSG OR INFOMSG)                      16035900 T  0000:0
                    % TYPE.[1:5] IS ASSIGNED PROCEDURE NUMBER                                       16036000 T  0000:0
                    % TYPE.[6:6] IS ASSIGNED MIXCODE                                               16036100 T  0000:0
                    STREAM(MIX:=63, BUFF:=KTR :); % SCAN INPUT BUFFER                               16036200 T  0000:0
                       BEGIN                                                                        16036300 T  0001:3
                       S1:=BUFF;                                                                    16036400 T  0001:3
                       D1:=BUFF; DI:=DI-1; DS:=LIT"<"; % BACKSPACE CHARACTER                        16036500 T  0002:0
                       8(60(IF SC="." THEN % END OF INPUT STRING                                    16036600 T  0003:0
                          BEGIN                                                                     16036700 T  0004:0
                          DS:=CHR; JUMP OUT 2 TO L;                                                 16036800 T  0004:0
                          END;                                                                      16036900 T  0005:0
                                                                                                                  16036700
                       IF SC="<" THEN % BACK SPACE CHARACTER                                        16037000 T  0005:0
                          BEGIN                                                                     16037100 T  0005:2
                          DI:=DI-1; IF SC NEQ DC THEN DI:=DI-1;                                     16037200 T  0005:2
                          END                                                                       16037300 T  0006:2
                                                                                                                  16037100
                       ELSE DS:=CHR));  % END OF BACKSPACE CHECK                                    16037400 T  0006:2
                    L: S1:=BUFF; DI:=LOC MIX; % CHECK FOR MIX INDEX                                 16037500 T  0007:2
                   L1: IF SC=" " THEN                                                               16037600 T  0008:0
                          BEGIN                                                                     16037700 T  0008:2
                          SI:=SI+1; GO TO L1;                                                       16037800 T  0008:2
                          END;                                                                      16037900 T  0009:0
                                                                                                                  16037700
                       IF SC="+"  THEN % EMPTY BUFFER                                               16038000 T  0009:0
                          BEGIN                                                                     16038100 T  0009:2
                          SKIP DB; DS:=SET; GO TO XXIT; % MIX.[1:1]=EMPTY BUFFER FLAG               16038200 T  0009:2
                          END;                                                                      16038300 T  0010:1
                                                                                                                  16038100
                       IF SC LSS "0" THEN GO TO XXIT; % NO MIX INDEX, SET "MIX"=63                  16038400 T  0010:1
                       IF SC GTR "9" THEN % QUESTION MARK, SET MIX.[3:1]                            16038500 T  0011:0
                          BEGIN                                                                     16038600 T  0011:2
                          SI:=SI+1; SKIP 3DB; DS:=SET; GO TO XXIT; % MIX.[3:1]=QMARK FLAG           16038700 T  0011:2
                          END;                                                                      16038800 T  0012:2
                                                                                                                  16038600
                       SI:=SI+1; IF SC LSS "0" THEN GO TO ONE;                                      16038900 T  0012:2
                       IF SC LEQ "9" THEN                                                           16039000 T  0013:2
                          BEGIN                                                                     16039100 T  0014:0
                          SI:=SI-1; DS:=20CT;                                                       16039200 T  0014:0
                          END                                                                       16039300 T  0014:2
                                                                                                                  16039100
                       ELSE                                                                         16039400 T  0014:2
                          BEGIN                                                                     16039500 T  0014:3
```

```
 ONE:     SI:=SI-1; DS:=OCT;                                                                16039600 T  0014:3
          END;                                                                              16039700 T  0015:1
                                                                                                        16039500
  L2: IF SC=" " THEN % SCAN TO NEXT VISIBLE CHARACTER                                       16039800 T  0015:1
          BEGIN                                                                             16039900 T  0015:3
          SI:=SI+1; GO TO L2;                                                               16040000 T  0015:3
          END;                                                                              16040100 T  0016:1
                                                                                                        16039900
      IF SC="+" THEN % NO INFORMATION AFTER MIX INDEX                                       16040200 T  0016:1
          BEGIN                                                                             16040300 T  0016:3
          DI:=LOC MIX; SKIP 2DB; DS:=SET; % MIX.[2:1]=ERROR FLAG                            16040400 T  0016:3
          END;                                                                              16040500 T  0017:2
                                                                                                        16040300
 XXIT: DI:=BUFF; DI:=DI-8; DS:=8LIT"INV KBD ";                                              16040600 T  0017:2
      BUFF:=SI; % SAVE LOCATION OF NEXT CHARACTER IN BUFFER                                 16040700 T  0019:1
      END STREAM;                                                                           16040800 T  0019:2
                                                                                                        16036300
    IF P([KTR],STD,[MIX],SND).[1:3]=0 THEN % NOT QMARK,EMPTY OR ERROR                       16040900 T  0019:3
      BEGIN                                                                                 16041000 T  0021:3
      TBLADDR:=TYPE:=SPACE(KEYMSGSZ);                                                       16041100 T  0022:1
      DISKWAIT(-TYPE,KEYMSGSZ,MESSAGETABLE[2],[22:26]);                                     16041110 T  0025:3
      STREAM(TBBL:=TYPE, BUFF:=KTR ; TOG:=(MIX NEQ 63));                                    16041200 T  0028:3
          BEGIN                                                                             16041300 T  0030:3
          SI:=TBBL; SI:=SI+1; DI:=BUFF; DI:=DI+2;                                           16041400 T  0030:3
  NEXT: CI:=CI+TOG; GO TO NOMIX;                                                            16041500 T  0031:3
   MIX: IF SC GEQ 1 THEN GO TO OK ELSE          % MIX SPECIFIED                             16041550 T  0032:2
              BEGIN                             %    BUT THIS IS NOT                        16041600 T  0033:2
              SI:=SI+8; GO TO MIX;              %    A MIX MESSAGE.                         16041650 T  0033:2
              END;                                                                          16041700 T  0034:0
                                                                                                        16041600
 NOMIX: IF SC GTR 1 THEN                        % MIX NOT SPECIFIED                         16041750 T  0034:0
          BEGIN                                 %    BUT THIS IS A                         16041800 T  0034:2
          SI:=SI+8; GO TO NOMIX;                %    MIX MESSAGE.                          16041850 T  0034:2
          END;                                                                          16041900 T  0035:0
                                                                                                        16041800
    OK: SI:=SI+1; DI:=DI-2;                                                                 16042000 T  0035:0
      IF SC="+" THEN % END OF TABLE                                                         16042100 T  0035:2
          BEGIN                                                                             16042200 T  0036:0
          TBBL:=TALLY; GO TO XT;                                                            16042300 T  0036:0
          END;                                                                              16042400 T  0036:2
                                                                                                        16042200
      IF 2 SC≠DC THEN                           % NOT MATCHING ENTRY                       16042450 T  0036:2
          BEGIN                                                                             16042500 T  0037:0
          SI:=SI+5; GO TO NEXT;                                                             16042550 T  0037:0
          END;                                                                              16042600 T  0037:2
                                                                                                        16042500
      TOG:=DI; DI:=LOC TBBL; SI:=SI+2; DS:=2 OCT;  % SWITCH VALUE                           16042650 T  0037:2
      SI:=SI-4; DI:=LOC TBBL; DS:=2CHR; % PROCED  & MIXCODE                                 16042700 T  0038:2
      SI:=TOG;                                                                          16042800 T  0039:1
   L: IF SC=" " THEN                                                                    16042900 T  0039:2
          BEGIN                                                                             16043000 T  0040:0
          SI:=SI+1; GO TO L;                                                                16043100 T  0040:0
          END;                                                                              16043200 T  0040:2
                                                                                                        16043000
      BUFF:=SI;                                                                             16043300 T  0040:2
    XT: END STREAM STATEMENT;                                                               16043400 T  0040:3
                                                                                                        16041300
```

```
      P( [KTR],STD, ,TYPE,STD);                                    16043500 T  0041:0
      FORGETSPACE(TBLADDR);                                        16043550 T  0042:0
      END % IF NOT QMARK, EMPTY OR ERROR                           16043600 T  0042:3
                                                                                16041000
ELSE  % QMARK, EMPTY OR ERROR                                      16043620 T  0042:3
IF MIX,[3:1] THEN  % QMARK                                         16043640 T  0042:3
BEGIN MIX:=63;                                                     16043660 T  0044:0
   TYPE:=VCC&@104[1:37:11];                                        16043680 T  0045:2
END                                                                16043700 T  0047:1
                                                                                16043660
ELSE TYPE:=0;                                                      16043750 T  0047:1
END PROCEDURE KEYINSCAN;                                           16043800 T  0048:2
                                                                                16035000
                                                                          SIZE= 0049 WORDS
```

```
                PROCEDURE KEYINO(B,KTRX); VALUE B,KTRX; REAL B,KTRX;                                  16044000 T  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00468
PRT(633) = KEYINO
                                                                                                      16045000 T  0000:0
                    BEGIN                                                                             16046000 T  0000:0
                    INTEGER ZZSTA;                                                                    16047000 T  0000:0
STACK(F+1) = ZZSTA
                    REAL BUFF, KTR, TYPE, MIX, A, I, J, K;                                            16048000 T  0000:0
STACK(F+2) = BUFF
STACK(F+3) = KTR
STACK(F+4) = TYPE
STACK(F+5) = MIX
STACK(F+6) = A
STACK(F+7) = I
STACK(F+10) = J
STACK(F+11) = K
                    REAL U = A;                                                                       16048100 T  0000:0
STACK(F+6) = U
                    ARRAY BUFA = BUFF[*];                                                             16049000 T  0000:0
STACK(F+2) = BUFA
                                                                                                      16050000 T  0000:0
                                                                                                      16051000 T  0000:0
                                                                                                      16052000 T  0000:0
                    LABEL DSM, CUTY, FORGET, ERROR, EXIT                                              16053000 T  0000:0
                          ,AX   ,IL   ,QT   ,OU   ,WY   ,RY   ,DS   ,TF   ,RM   ,DP                  16054000 T  0000:0
                          ,DD   ,ST   ,CM   ,SV   ,CL   ,BK   ,TI   ,PR   ,RO   ,IT                  16055000 T  0000:0
                          ,WI   ,RXIT ,RC                                                             16056000 T  0000:0
                                                                                                      16057000 T  0000:0
                                                                                                      16058000 T  0000:0
                    ;                                                                                 16059000 T  0000:0
                                                                                                      16060000 T  0000:0
                    SWITCH S:= ERROR                                                                  16061000 T  0000:0
                          ,AX   ,IL   ,IL   ,QT   ,OU   ,WY   ,RY   ,DS   ,DS   ,TF                  16062000 T  0000:0
                          ,TF   ,RM   ,DP   ,DD   ,DD   ,DD   ,ST   ,CM   ,SV   ,CL                  16063000 T  0000:0
                          ,BK   ,RXIT ,RY   ,RXIT ,RXIT ,TI   ,PR   ,RO   ,RO   ,IT                  16064000 T  0000:0
                          ,WI   ,RXIT ,RC                                                             16065000 T  0000:0
                                                                                                      16066000 T  0000:0
                                                                                                      16067000 T  0000:0
                    ;                                                                                 16068000 T  0000:0
                    SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;                                16069000 T  0000:0
                                                                                                      16070000 T  0000:0
                    BUFF  :=KTRX.[15:15];                                                             16071000 T  0005:0
                    MIX   :=KTRX.[ 9:6 ];                                                             16072000 T  0005:0
                    TYPE  :=KTRX.[ 2:7 ];                                                             16073000 T  0008:2
                    KTR   :=KTRX.[15:33];                                                             16074000 T  0009:3
                    ZZSTA :=0 & (M[BUFF-2])[9:9:9];                                                   16075000 T  0011:0
                    GO TO S[TYPE];                                                                    16076000 T  0012:1
AX:                                                                                                   16077000 T  0015:1
                    I := BUFF;                                                                        16078000 T  0033:1
                    GO TO RXIT;                                                                       16079000 T  0033:1
                                                                                                      16080000 T  0034:0
IL:                                                                                                   16081000 T  0034:2
                    IF (I:=ANVIL(TYPE=2,KTR)) GTR PSEUDOMAXT THEN % IL=2, UL=3                        16082000 T  0034:2
                       IF I LSS 70 THEN GO TO ERROR;                                                  16083000 T  0037:0
                    TYPE := 2; % IL                                                                   16084000 T  0038:3
                    IF I GTR PSEUDOMAXT THEN BUFF:=I;                                                 16085000 T  0039:2
                    GO TO RXIT;                                                                       16086000 T  0041:2
```

```
OU;                                                                                16087000 T  0042:0
   STREAM(A:="LP" ; B:="MT", C:="DK", D:="CP", KTR);                               16088000 T  0042:0
      BEGIN                                                                        16089000 T  0044:0
      S; := KTR;                                                                   16090000 T  0044:0
      D; := LOC A; DI := DI+6;                                                     16091000 T  0044:1
      TALLY:=1; IF SC="+" THEN GO TO XT;                                           16092000 T  0044:3
      TALLY:=2; IF 2 SC=DC THEN GO TO XT;                                          16093000 T  0045:3
      TALLY:=3; SI:=SI-2; DI:=DI+14; IF 2 SC=DC THEN GO TO XT;                     16094000 T  0046:3
      TALLY:=4; SI:=SI-2; DI:=DI+6;  IF 2 SC=DC THEN GO TO XT;                     16095000 T  0048:1
      TALLY:=5; SI:=SI-2; DI:=DI+6;  IF 2 SC=DC THEN GO TO XT;                     16096000 T  0049:3
      TALLY:=0;                                                                    16097000 T  0051:1
  XT: A := TALLY;                                                                  16098000 T  0051:2
      END;                                                                         16099000 T  0051:3
                                                                                                  16089000
   IF(I:=P) = 0 THEN GO TO ERROR;                                                  16100000 T  0052:0
   GO TO RXIT;                                                                     16101000 T  0053:2
WY:                                                                                16102000 T  0058:0
   IF MIX LSS 63 THEN GO TO RXIT; % <MIX> WY                                       16103000 T  0058:0
   SPOIT;                                                                          16104000 T  0059:1
   A:=0;                                                                           16105000 T  0060:0
   FOR I:=1 STEP 1 UNTIL MIXMAX DO                                                 16106000 T  0060:3
      IF *[JARROW[I]] NEQ 0 THEN                                                   16107000 T  0062:0
         IF REPLY[I] LSS 0 THEN REPLY[A:=I]:=VWY;                                  16108000 T  0063:1
   IF A≠0 THEN GO TO FORGET;                                                       16109000 T  0069:1
   MIBUFF-1]:=FLAG("NULL   ");                                                     16109500 T  0070:2
   GO TO ERROR;                                                                    16110000 T  0073:0
DS:                                                                                16111000 T  0075:0
   IF MIX=63 THEN % "DS A/B"                                                       16112000 T  0075:0
      BEGIN                                                                        16113000 T  0075:3
      NAMEID(J,KTR); NAMEID(K,KTR); NAMEID(K,KTR);                                 16114000 T  0076:1
      FOR MIX:=1 STEP 1 UNTIL MIXMAX DO                                            16115000 T  0079:1
         IF *[JARROW[MIX]] NEQ 0 THEN                                              16116000 T  0080:0
            IF (J EQV ABS(JAR[MIX,0]))=(NOT 0) THEN                                16117000 T  0081:1
               IF (K EQV ABS(JAR[MIX,1]))=NOT 0 THEN                               16118000 T  0084:1
                  BEGIN                                                            16118100 T  0087:1
                  TABCNT[MIX]:=TABCNT[MIX]+1;                                      16118200 T  0087:3
                  GO TO DSM;                                                       16118300 T  0091:0
                  END;                                                             16118400 T  0091:2
                                                                                                  16118100
      GO TO ERROR; % NOT FOUND                                                     16119000 T  0093:3
      END; % IF MIX NOT GIVEN                                                      16120000 T  0094:1
                                                                                                  16113000
   IF JARROW[MIX] NEQ 0 THEN                                                       16121000 T  0094:1
      BEGIN                                                                        16122000 T  0095:1
 DSM: JAR[MIX,6].[1:1]:=((TYPE=9) OR (TYPE=20)); % DS=8,SD=9,CL=20                 16123000 T  0095:3
      TERMINATE(MIX&(IF B.[9:9] GTR 0 THEN 61 ELSE 3)[CTF]);                       16124000 T  0100:1
      HALT;                                                                        16125000 T  0104:0
      NOPROCESSTOG:= NOPROCESSTOG-1;                                               16126000 T  0104:2
      GO TO FORGET;                                                                16127000 T  0105:3
      END;                                                                         16128000 T  0106:1
                                                                                                  16122000
   GO TO ERROR;                                                                    16129000 T  0106:1
TF:                                                                                16130000 T  0106:3
   IF TYPE=11 THEN SPOIT; % SF=11                                                  16131000 T  0106:3
   CHANGEFACTOR(KTR,TYPE=10); % TF=10,SF=11                                        16132000 T  0109:0
   GO TO EXIT;                                                                     16133000 T  0110:2
RM:                                                                                16134000 T  0111:0
```

```
   TYPE:=TYPE&B[9:9:9];                                                                  16135000 T  0111:0
   GO TO RXIT;                                                                           16136000 T  0112:3
DP:                                                                                      16137000 T  0113:1
 $ SET OMIT = NOT(DEBUGGING OR DUMP)                                                     16138000 T  0113:1
   STREAM(A:="LP", KTR : B:="MT");                                                       16139000 T  0113:1
      BEGIN                                                                              16140000 T  0114:3
      S1 := KTR;                                                                         16141000 T  0114:3
      D1 := LOC A; D1 := D1 + 6; TALLY:=1;                                               16142000 T  0115:0
      IF 2 SC=DC THEN GO TO XT;                                                          16143000 T  0115:3
      D1 := D1 + 22; S1 := S1 - 2; TALLY:=2;                                             16144000 T  0116:2
      IF 2 SC=DC THEN GO TO XT;                                                          16145000 T  0117:1
      TALLY:=0;                                                                          16146000 T  0118:0
 XT:  A := TALLY; KTR := S1;                                                             16147000 T  0118:1
      END STREAM STATEMENT;                                                              16148000 T  0118:3
                                                                                                        16140000
   IF (A:=P([KTR],STD))=0 THEN GO TO ERROR;                                              16149000 T  0119:0
   IF A=1 THEN                                                                           16150000 T  0121:0
 $ SET OMIT = DEBUGGING                                                    %763-         16150099 C  0121:3
     GO TO ERROR;                                                          %763-         16150100 C  0121:3
 $ POP OMIT                                                                %763-         16150101 C  0122:1
 $ SET OMIT = NOT DEBUGGING                                                %763-         16150999 C  0122:1
   DUMPCORE(KTR&BUFF[15:33:15]);                                                         16154000 T  0122:1
 $ POP OMIT                                                                             16154001 T  0124:0
   GO TO EXIT;                                                                         16155000 T  0124:0
DD:                                                                                      16156000 T  0127:0
 $ SET OMIT = NOT(DEBUGGING)                                                             16157000 T  0127:0
   GO TO FORGET;                                                                         16161000 T  0127:0
ST:                                                                                      16162000 T  0127:2
   IF -REPLY[MIX] = (VWY&VOK[36:42:6]) OR JARROW[MIX]=0 THEN GO ERROR;                   16163000 T  0127:2
 $ SET OMIT = NOT(WORKSET)                                                               16163100 T  0131:3
   IF JAR[MIX,9].[3:1] THEN GO TO ERROR; % ALREADY ST=ED                                 16163200 T  0131:3
 $ POP OMIT % WORKSET                                                                    16163300 T  0134:0
   IF NOTERMSET(MIX) THEN PRTROW[MIX].[PSF]:=2;                                          16164000 T  0134:0
   GO TO FORGET;                                                                         16166000 T  0138:2
CM:                                                                                      16167000 T  0139:0
   CHANGEMCP(KTR);                                                                       16168000 T  0139:0
   GO TO EXIT;                                                                           16169000 T  0139:3
SV:                                                                                      16170000 T  0140:1
   SAVETHEUNIT(KTR);                                                                     16171000 T  0140:1
   GO FORGET;                                                                            16172000 T  0141:0
QT:                                                                                      16173000 T  0141:2
      IF MIX LSS 63 THEN % MIX INDEX SPECIFIED                                           16176000 T  0141:2
   CUTY: IF JAR[MIX,9].SYSJOBF = PRNPBTCODE THEN                                         16178000 T  0142:1
            BEGIN                                                                        16180000 T  0144:3
            REPLY[MIX]:=TYPE;                                                            16181000 T  0145:1
            STREAM(A:=0, B:=0 : KTR);                                                    16187000 T  0146:2
               BEGIN                                                                     16188000 T  0148:0
               S1:=KTR;                                                                  16189000 T  0148:0
               IF SC="+" THEN TALLY:=2 ELSE                                              16190000 T  0148:1
               IF SC="-" THEN TALLY:=3 ELSE GO XT;                                       16191000 T  0149:1
         B2:   S1:=S1+1; IF SC=" " THEN GO TO B2;                                        16192000 T  0150:2
               B:=TALLY; TALLY:=0;                                                       16193000 T  0151:2
               6(IF SC LSS "0" THEN JUMP OUT; S1:=S1+1; TALLY:=TALLY+1);                 16194000 T  0152:0
               KTR:=TALLY; D1:=LOC A; S1:=S1-KTR; DS:=KTR OCT;                           16195000 T  0154:0
         XT:   END STREAM STATEMENT;                                                     16196000 T  0155:2
                                                                                                   16188000
            NT2:=P;                                                                      16197000 T  0155:3
```

```
            NT1:=P;                                                                  16198000 T  0156:1
            PRT[MIX,@25]:=5&NT1[9:24:24]&NT2[1:46:2];                                16199000 T  0156:3
            GO TO FORGET;                                                            16200000 T  0160:2
            END                                                                      16201000 T  0161:0
                                                                                                 16180000
         ELSE GO TO ERROR;                    % NOT PRNPBT                          16202000 T  0161:0
CL:                                           % MUST FOLLOW QT                      16203000 T  0161:0
   IF (I:=UNITIN(TINU, KTR)) LSS 64 THEN % UNIT ] MTX                                16204000 T  0161:0
      IF (MIX:=RDCTABLE[I],[8:6]) NEQ 0 THEN                                         16205000 T  0163:1
         BEGIN                                                                       16206000 T  0165:3
         TABCNT[MIX]:=TABCNT[MIX]+1;                                                 16206100 T  0166:1
         IF TYPE=4 THEN GO TO QT ELSE GO TO DSM;                                     16206200 T  0169:2
         END;                                                                        16206300 T  0171:1
                                                                                                 16206000
 $ SET OMIT = NOT(SHAREDISK)                                                         16207000 T  0171:1
   IF TYPE=4 OR (I GTR 29) THEN GO TO ERROR; % QT OR PSEUDO UNIT                     16215000 T  0171:1
   LABELTABLE[I] := P(DUP,LOD,SSP);    % MARK IT NOT IN USE                         16216000 T  0173:3
   MIX:=63;                                                                          16217000 T  0175:2
   GO TO RY;                                                                         16218000 T  0176:1
BK:                                                                                  16219000 T  0176:3
 $ SET OMIT = NOT(DATACOM AND DCSPO)                                                 16220000 T  0176:3
      BEGIN                                                                          16223000 T  0176:3
      IF (I:= MESSAGEHOLDER.[CF]) NEQ 0 THEN                                         16224000 T  0176:3
      IF (J:= M[I].[FF]) NEQ 0 THEN                                                  16225000 T  0178:2
         BEGIN                                                                       16226000 T  0181:2
            DO BEGIN                                                                 16227000 T  0182:0
            A:=M[J];                                                                 16228000 T  0182:0
            IF (A.[4:5]=0 AND MIX=63) OR (A.[4:5]=MIX AND MIX NEQ 63)                16229000 T  0183:2
 $ SET OMIT = NOT(DATACOM AND DCSPO)                                                 16230000 T  0187:2
            THEN                                                                     16232000 T  0187:2
               BEGIN                                                                 16233000 T  0188:1
               M[I]:= P(DUP,LOD)&A[18:18:15];                                        16234000 T  0188:3
               NUMESS:= NUMESS-1;                                                    16235000 T  0191:0
               FORGETSPACE(J+1);                                                     16236000 T  0192:1
               END ELSE I:=J;                                                        16237000 T  0193:2
                                                                                                 16233000
            END UNTIL (J:= A.[FF])=0;                                                16238000 T  0194:3
                                                                                                 16227000
         MESSAGEHOLDER.[FF]:= I;                                                     16239000 T  0197:0
         END;                                                                        16240000 T  0198:1
                                                                                                 16226000
      END;                                                                           16241000 T  0198:1
                                                                                                 16223000
   MIX:=63;                                                                          16241500 T  0198:1
   GO TO FORGET;                                                                     16242000 T  0199:0
RY:                                                                                  16243000 T  0199:2
   IF (I:=FORMESS(KTR,TYPE=VFM)) LSS 0 THEN GO TO FORGET;                            16244000 T  0199:2
   IF I GTR 31 THEN GO TO ERROR ELSE GO TO RXIT;                                     16245000 T  0202:2
TI:                                                                                  16246000 T  0204:1
   TIMEUSED(BUFF-1,MIX);                                                             16247000 T  0204:1
   GO TO EXIT;                                                                       16248000 T  0205:3
PR:                                                                                  16249000 T  0206:1
   SPOIT;                                                                            16250000 T  0206:1
   CHANGEPRIORITY(KTR,MIX);                                                          16251000 T  0207:0
   GO TO EXIT;                                                                       16252000 T  0208:0
RO:                                                                                  16253000 T  0208:2
   CHANGEOPTION(KTR,TYPE=28); % RO=28,SO=29                                          16254000 T  0208:2
   GO TO EXIT;                                                                       16255000 T  0210:0
```

```
IT:
   IF NOT JAR[MIX,9].[4:1] THEN GO ERROR;                                  16256000 T  0210:2
   JAR[MIX,9]←(*P(DUP)) & 1[5:47:1];                                       16257000 T  0210:2
   GO FORGET;                                                              16258000 T  0212:2
WI:                                                                        16259000 T  0215:2
   WHATINTRNSIC(BUFF-1);                                                   16260000 T  0216:0
   GO TO ERROR;                                                            16261000 T  0216:0
RC:                                                                        16262000 T  0217:1
   U ← UNITIN(TINU,KTR);                                                   16263000 T  0217:3
   IF U > 15 THEN GO ERROR;                                                16263100 T  0217:3
   IF (1←RDCTABLE[U].[8:6])=0 OR                                           16263200 T  0219:2
      PRNTABLE[U].[15:15]=0 OR NOT PRNTABLE[U].[1:1] THEN GO ERROR;        16263300 T  0220:3
   INDEPENDENTRUNNER(P(..REELCHANGER),U,204);                              16263350 T  0222:3
   GO FORGET;                                                              16263600 T  0226:3
RXIT:                                                                      16263700 T  0228:0
   REPLY[MIX] := TYPE&I[18:33:15];                                         16343000 T  0228:2
   IF I NEQ BUFF THEN                                                      16343100 T  0228:2
      BEGIN                                                                16343200 T  0230:1
FORGET:                                                                    16343300 T  0231:0
      STREAM(I:=BUFF-1);  DS:= LIT "←";                                    16343400 T  0231:2
ERROR:                                                                     16343500 T  0231:2
      SPOUT((BUFF-1) INX (0&ZZSTA[9:9:9]));                                16343600 T  0233:2
      END;                                                                 16343700 T  0233:2
                                                                           16343800 T  0236:3
                                                                                       16343300
EXIT:                                                                      16343900 T  0236:3
   IF(MIX>0)AND(MIX≤MIXMAX)THEN TABCNT[MIX]←TABCNT[MIX]-1;        %113-    16343950 P  0236:3
   END PROCEDURE KEYINO;                                                   16344000 T  0242:1
                                                                                       16046000
                                                                         SIZE= 0243 WORDS
```

```
                PROCEDURE KEYIN1(B,KTRX); VALUE B,KTRX; REAL B,KTRX;                    16345000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00477
PRT(634) = KEYIN1

                    BEGIN                                                               16346000 T  0000:0
                    INTEGER ZZSTA;                                                      16347000 T  0000:0
STACK(F+1) = ZZSTA                                                                      16348000 T  0000:0
                    REAL BUFF, KTR, TYPE, MIX, A, I, J, K;                              16349000 T  0000:0
STACK(F+2) = BUFF
STACK(F+3) = KTR
STACK(F+4) = TYPE
STACK(F+5) = MIX
STACK(F+6) = A
STACK(F+7) = I
STACK(F+10) = J
STACK(F+11) = K
                    ARRAY BUFA = BUFF[*];                                               16350000 T  0000:0
STACK(F+2) = BUFA

                                                                                        16351000 T  0000:0
                                                                                        16352000 T  0000:0
                                                                                        16353000 T  0000:0
                    LABEL FORGET, ERROR, EXIT                                           16354000 T  0000:0
                          ,BO  ,LI  ,SS  ,BS  ,SC  ,VQ  ,RR  ,CA  ,DT  ,WD              16355000 T  0000:0
                          ,TR  ,WT  ,WM  ,CC  ,OL  ,PB  ,RN  ,LD  ,RD  ,ED              16356000 T  0000:0
                          ,SI  ,LR  ,OT  ,IN  ,FE  ,OC  ,SQ  ,CS  ,HS  ,WK              16357000 T  0000:0
                                                                                        16358000 T  0000:0
                                                                                        16359000 T  0000:0
                          ;                                                             16360000 T  0000:0
                    SWITCH S:= ERROR                                                    16361000 T  0000:0
                          ,BO  ,LI  ,LI  ,LI  ,SS  ,SS  ,SS  ,SS  ,BS  ,BS              16362000 T  0000:0
                          ,SC  ,VQ  ,RR  ,CA  ,CA  ,DT  ,WD  ,TR  ,WT  ,WM              16363000 T  0000:0
                          ,CC  ,OL  ,PB  ,RN  ,LD  ,RD  ,RD  ,ED  ,SI  ,LR              16364000 T  0000:0
                          ,OT  ,IN  ,FE  ,OC  ,SQ  ,CS  ,HS  ,WK                        16365000 T  0000:0
                                                                                        16366000 T  0000:0
                                                                                        16367000 T  0000:0
                          ;                                                             16368000 T  0000:0
                    SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;                  16369000 T  0000:0
                                                                                        16370000 T  0000:0
                    BUFF   :=KTRX.[15:15];                                              16371000 T  0000:0
                    MIX    :=KTRX.[ 9:6 ];                                              16372000 T  0005:0
                    TYPE   :=KTRX.[ 2:7 ];                                              16373000 T  0005:0
                    KTR    :=KTRX.[15:33];                                              16374000 T  0008:2
                    ZZSTA  :=0 & (M[BUFF-2])[9:9:9];                                    16375000 T  0009:3
                    GO TO S[TYPE];                                                      16376000 T  0011:0
BO:                                                                                     16377000 T  0012:1
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                    16378000 T  0015:1
LI:                                                                                     16379000 T  0035:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                    16380000 T  0035:3
                    GO TO EXIT;                                                         16386000 T  0035:3
SS:                                                                                     16387000 T  0035:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                    16390000 T  0035:3
                    GO TO EXIT;                                                         16391000 T  0036:1
BS:                                                                                     16392000 T  0036:1
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                    16394000 T  0036:1
                    GO EXIT;                                                            16395000 T  0036:3
                                                                                        16396000 T  0036:3
                                                                                        16406000 T  0036:3
```

```
SC:
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                16407000 T  0037:1
   GO TO EXIT;                                                                      16408000 T  0037:1
RR:                                                                                 16410000 T  0037:1
 $ SET OMIT = NOT(DATACOM)                                                          16411000 T  0037:3
VQ:                                                                                 16412000 T  0037:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                16456000 T  0037:3
   GO TO EXIT;                                                                      16457000 T  0037:3
CA:                                                                                 16485000 T  0037:3
 $ SET OMIT = NOT(AUXMEM)                                                           16486000 T  0038:1
   GO TO ERROR; % SPOUT AUX MESSAGE OR ERROR MESSAGE                                16487000 T  0038:1
DT:                                                                                 16489000 T  0038:1
   SETDATE(KTR);                                                                    16490000 T  0038:3
   GO TO EXIT;                                                                      16491000 T  0038:3
WD:                                                                                 16492000 T  0039:2
   GIMEDATE(BUFF-1,1);                                                              16493000 T  0040:0
   GO TO EXIT;                                                                      16494000 T  0040:0
TR:                                                                                 16495000 T  0041:2
   SETIME(KTR);                                                                     16496000 T  0042:0
   GO TO EXIT;                                                                      16497000 T  0042:0
WT:                                                                                 16498000 T  0042:3
   TIMEOUT (BUFF-1);                                                                16499000 T  0043:1
   GO TO EXIT;                                                                      16500000 T  0043:1
WM:                                                                                 16501000 T  0044:2
   FORGETSPACE(BUFF-1);                                                             16502000 T  0045:0
   WHATMCP(BUFF);                                                                   16503000 T  0045:0
   BUFF:=BUFF+1; % FAKE OUT ERROR                                                   16503100 T  0046:1
   GO TO ERROR; % SPOUT MESSAGE                                                     16503200 T  0047:0
CC:                                                                                 16504000 T  0048:1
   A:=M[BUFF-3].[CF]-BUFF; % WDS IN MESSAGE                                         16505000 T  0048:3
   STREAM(BUFF, BL:=A>8, KTR:=(KTR:=SPACE(A+2)+2));                                 16505100 T  0048:3
      BEGIN                                                                         16506000 T  0051:3
      SI:=BUFF;                                                                     16507000 T  0056:2
      BL(36(DS:=2LIT" ")); DI:=KTR);                                                16508000 T  0056:2
      IF SC NEQ "+" THEN                                                            16508100 T  0056:3
         BEGIN                                                                      16509000 T  0058:3
         DS:=CHR;                                                                   16510000 T  0059:1
    L:   IF SC NEQ "+" THEN                                                         16511000 T  0059:1
            BEGIN                                                                   16512000 T  0059:2
            IF SC NEQ @14 THEN DS:=CHR ELSE SI:=SI+1;                               16513000 T  0060:0
            GO TO L;                                                                16514000 T  0060:0
            END;                                                                    16515000 T  0061:1
                                                                                    16516000 T  0061:2
                                                                                                16513000
         END;                                                                       16517000 T  0061:2
                                                                                                16510000
      DS:=CHR;                                                                      16518000 T  0061:2
      END;                                                                          16519000 T  0061:3
                                                                                                16507000
   M[KTR-4].[9:6]:=0;                                                               16520000 T  0062:0
   IF ABS(B) GTR 1 THEN                                                             16521000 T  0065:1
      INDEPENDENTRUNNER(P(.CONTROLCARD),KTR&30[2:42:6]&ZZSTA[9:9:9],                16522000 T  0066:1
                        192)                                                        16522100 T  0069:2
   ELSE INDEPENDENTRUNNER(P(.CONTROLCARD),KTR&25[2:42:6],192);                      16523000 T  0069:3
   GO TO FORGET;                                                                    16524000 T  0072:3
OL:                                                                                 16525000 T  0073:1
   OUTPUTLABEL(KTR);                                                                16526000 T  0073:1
   GO TO EXIT;                                                                      16527000 T  0074:0
```

```
PB:
   PRINTBACKUP(KTR&BR[6:9:9]);                                          16528000 T  0074:2
   GO TO EXIT;                                                          16529000 T  0074:2
RN:                                                                     16530000 T  0076:1
   SPOIT;                                                               16531000 T  0076:3
   RUNTHEDECK(KTR);                                                     16532000 T  0076:3
   GO TO EXIT;                                                          16533000 T  0078:0
LD:                                                                     16534000 T  0078:3
   STARTLOADN(KTR);                                                     16535000 T  0079:1
   GO TO EXIT;                                                          16536000 T  0079:1
RD:                                                                     16537000 T  0080:0
   DECKREMOVER(KTR);                                                    16538000 T  0080:2
   GO TO EXIT;                                                          16539000 T  0080:2
FD:                                                                     16540000 T  0081:1
   EXTERNALEND(KTR);                                                    16541000 T  0081:3
   GO TO EXIT;                                                          16542000 T  0081:3
SI:                                                                     16543000 T  0082:2
 $ SET OMIT = NOT(STATISTICS)                                           16544000 T  0083:0
   GO TO ERROR; % SPOUT MESSAGE                                         16545000 T  0083:0
LR:                                                                     16576000 T  0083:0
 $ SET OMIT = NOT(DCLOG AND DATACOM)                                    16577000 T  0083:2
   GO TO FORGET;                                                        16578000 T  0083:2
IN:                                                                     16580000 T  0083:2
   KTR:=-KTR;                                                           16580600 T  0084:0
OT:                                                                     16580800 T  0084:0
 $ SET OMIT = NOT(BREAKOUT)                                             16581000 T  0085:0
   IF PRTGAMES(KTR,MIX) THEN GO ERROR ELSE                              16582000 T  0085:0
      IF KTR LSS 0 THEN GO FORGET ELSE GO EXIT;                         16588000 T  0085:0
FE:                                                                     16589000 T  0086:0
   J:= GETSPACE(35,9,0)+2;                                              16590000 T  0088:2
   STREAM(KTR:D:=J+2);                                                  16591000 T  0088:2
      BEGIN                                                             16592000 T  0090:3
      S1:=KTR;                                                          16593000 T  0092:2
      4(63(IF SC NEQ "←" THEN DS:=CHR ELSE JUMP OUT 2 TO LL));          16594000 T  0092:2
   LL: DS:=LIT"←"; DI:=DI-1; KTR:=DI;                                   16595000 T  0092:3
      END;                                                              16596000 T  0095:2
                                                                        16597000 T  0096:2
                                                                                       16593000
   I:= P INX 0;                                                         16598000 T  0096:3
   M[J]:= (I-J) DIV 5;                                                  16599000 T  0097:3
   STREAM(DATE, A:=J+1);                                                16600000 T  0100:1
      BEGIN                                                             16601000 T  0101:3
      S1:=LOC DATE; DS:=8 OCT;                                          16602000 T  0101:3
      END;                                                              16603000 T  0102:1
                                                                                       16601000
   LINKUP(19,J);                                                        16604000 T  0102:2
   GO TO FORGET;                                                        16605000 T  0103:2
OC:                                                                     16606000 T  0104:0
   LOGCOMMENT(KTR);                                                     16607000 T  0104:0
   GO TO FORGET;                                                        16608000 T  0104:3
SQ:                                                                     16609000 T  0105:1
   STREAM(TYPE:=0;INFO1:="STOPOKN",INFO2:=@2567630000000000,            16609100 T  0105:1
         KTR);                                                          16609200 T  0106:2
   BEGIN                                                                16609300 T  0107:0
        S1:=KTR; DI:=LOC INFO1; DI:=DI+1; TALLY:=1;                     16609400 T  0107:0
        IF 4 SC=DC THEN GO TO EXT;                                      16609500 T  0108:0
        S1:=S1-4; TALLY:=TALLY+1;                                       16609600 T  0108:3
        IF 2 SC=DC THEN GO TO EXT;                                      16609700 T  0109:1
```

```
          S1:=SI-2; TALLY:=TALLY+2;                                                    16609800 T  011:0
          IF 4 SC=DC THEN GO TO EXT;                                                   16609900 T  011:2
          TALLY:=TALLY+4;                                                              16610000 T  011:1
     EXT: TYPE:=TALLY;                                                                 16610100 T  011:2
     END;                                                                              16610200 T  011:3
                                                                                                  16609300
     IF P(M[P(.DISKSQUASH)],TOP) THEN IF P(P.[FF] AND P.DUP)#0 THEN                    16610300 T  011:0
     P(.DISKSQUASH.STD) ELSE GO TO ERROR ELSE IF P(XCH)=8 THEN                         16610400 T  011:2
     BEGIN                                                                             16610500 T  011:3
          INDEPENDENTRUNNER(P(.DISKSQUASH).KTR.128);                                   16610600 T  012:1
          GO TO EXIT;                                                                  16610700 T  012:2
     END ELSE GO TO ERROR;                                                             16610800 T  012:0
                                                                                                  16610500
     GO TO FORGET;                                                                     16610900 T  012:0
HS:                                                                                    16611000 T  012:2
 $ SET OMIT = NOT SEPTICTANK                                                           16611990 T  012:2
CS:                                                                                    16613000 T  012:2
 $ SET OMIT = NOT SEPTICTANK                                                           16613990 T  012:2
    GO TO EXIT;                                                                        16615000 T  012:2
WK: % WORKSET REQUESTS                                                                 16615100 T  013:0
 $ SET OMIT = NOT(WORKSET)                                                             16615110 T  013:0
   WKSETVALUES(KTRX); GO TO EXIT;                                                      16615200 T  013:0
 $ POP OMIT % WORKSET                                                                  16615210 T  014:1
FORGET:                                                                                16689000 T  014:1
   STREAM(T:=BUFF"1); DS:= LIT "←";                                                    16689100 T  014:1
ERROR:                                                                                 16689200 T  016:1
   SPOUT((BUFF"1) INX (0&ZZSTA[9:9:9]));                                               16689300 T  016:1
EXIT:                                                                                  16689400 T  019:2
   IF(MIX>0)AND(MIX≤MIXMAX)THEN TABCNT[MIX]←TABCNT[MIX]-1;          %113-              16689450 P  019:2
   END PROCEDURE KEYIN1;                                                               16689500 T  035:0
                                                                                                  16347000
                                                                                    SIZE= 0136 WORDS
```

```
                PROCEDURE KEYIN2(KTRX); VALUE KTRX; REAL KTRX;
PRT(635) = KEYIN2

                    BEGIN
                    REAL    RCW    =        + 0;
STACK(F+0) = RCW
                            REAL MSCW=-2;
STACK(F-2) = MSCW
                    INTEGER ZZSTA = RCW    + 1;
STACK(F+1) = ZZSTA
                    REAL    BUFF   = ZZSTA + 1,
STACK(F+2) = BUFF
                            KTR    = BUFF  + 1,
STACK(F+3) = KTR
                            TYPE   = KTR   + 1,
STACK(F+4) = TYPE
                            MIX    = TYPE  + 1,
STACK(F+5) = MIX
                            A      = MIX   + 1,
STACK(F+6) = A
                            I      = A     + 1,
STACK(F+7) = I
                            J      = I     + 1,
STACK(F+10) = J
                            K      = J     + 1,
STACK(F+11) = K
                            B      = K     + 1,
STACK(F+12) = B
                            R      = B     + 1,
STACK(F+13) = R
                            R1     = R     + 1,
STACK(F+14) = R1
                            R2     = R1    + 1,
STACK(F+15) = R2
                            R3     = R2    + 1,
STACK(F+16) = R3
                            R4     = R3    + 1;
STACK(F+17) = R4
                       REAL    UNITNO= R4   + 1;
STACK(F+20) = UNITNO
                       INTEGER INT1  = NT1      ,
PRT(160) = INT1
                               INT2  = A        ,
STACK(F+6) = INT2
                               INT3  = J        ,
STACK(F+10) = INT3
                               INT4  = R4       ;
STACK(F+17) = INT4
                       ARRAY   BUFA  = BUFF[*]  ,
STACK(F+2) = BUFA
                               UT    = R3[*]
STACK(F+16) = UT
                     $ SET OMIT = NOT SHAREDISK
                               ;
                     $ SET OMIT = SHAREDISK
                       DEFINE  U     = AVTABLE# ;
```

```
                                                16690000 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00482
                                                16690500 T  0000:0
                                                16691000 T  0000:0
                                                16691500 T  0000:0
                                                16691550 T  0000:0
                                                16692000 T  0000:0
                                                16692500 T  0000:0
                                                16693000 T  0000:0
                                                16693500 T  0000:0
                                                16694000 T  0000:0
                                                16694500 T  0000:0
                                                16695000 T  0000:0
                                                16695500 T  0000:0
                                                16696000 T  0000:0
                                                16696100 T  0000:0
                                                16696200 T  0000:0
                                                16696300 T  0000:0
                                                16696400 T  0000:0
                                                16696500 T  0000:0
                                                16696600 T  0000:0
                                                16696650 T  0000:0
                                                16696700 T  0000:0
                                                16696800 T  0000:0
                                                16696900 T  0000:0
                                                16697000 T  0000:0
                                                16697100 T  0000:0
                                                16697200 T  0000:0
                                                16697300 T  0000:0
                                                16697600 T  0000:0
                                                16697700 T  0000:0
                                                16697800 T  0000:0
```

```
                $ POP OMIT
                  REAL     HN1    = MIX      ,                                                    16697900 T  0000:0
                                                                                                  16698000 T  0000:0
STACK(F+5) = HN1
                           HN2    = TYPE     ;                                                    16698100 T  0000:0
STACK(F+4) = HN2
                    REAL   SEG    = I,                                                           16698200 T  0000:0
STACK(F+7) = SEG
                           ADR    = J,                                                           16698210 T  0000:0
STACK(F+10) = ADR
                           LOCN   = K,                                                           16698220 T  0000:0
STACK(F+11) = LOCN
                           HALTED= R1;                                                           16698230 T  0000:0
STACK(F+14) = HALTED
                     NAME  SEGDICT = R3;                                                         16698240 T  0000:0
STACK(F+16) = SEGDICT
                                                                                                  16698500 T  0000:0
                LABEL RR, PGA, FERGIT, FORGET, ERROR, EXIT                                        16699000 T  0000:0
                      ,WU  ,WP  ,WR  ,MX  ,TS  ,LF  ,LC  ,LS  ,EX  ,PD                            16699500 T  0000:0
                      ,SM  ,PO  ,PG  ,AU  ,MS  ,LN  ,CD  ,CU  ,SY  ,SL                            16700000 T  0000:0
                      ,RW  ,CI  ,CT  ,XD  ,MC  ,RS  ,HD  ,RA  ,EI                  %139-       16700500 P  0000:0
                                                                                                  16701000 T  0000:0
                                                                                                  16701500 T  0000:0
                                                                                                  16702000 T  0000:0
                     ;                                                                            16702500 T  0000:0
                SWITCH S := ERROR                                                                 16703000 T  0000:0
                            ,WU  ,WP  ,WR  ,MX  ,TS  ,TS  ,TS  ,TS  ,LF  ,LC                      16703500 T  0000:0
                            ,LS  ,EX  ,PD  ,SM  ,PO  ,PO  ,PG  ,AU  ,MS  ,LN                      16704000 T  0000:0
                            ,CD  ,CD  ,CD  ,CU  ,SY  ,SL  ,RW  ,CI  ,CT  ,CT                      16704500 T  0000:0
                            ,CT  ,XD  ,XD  ,MC  ,RS  ,HD  ,RA  ,EI                %139-       16705000 P  0000:0
                                                                                                  16705500 T  0000:0
                                                                                                  16706000 T  0000:0
                                                                                                  16706500 T  0000:0
                     ;                                                                            16707000 T  0000:0
                                                                                                  16707500 T  0000:0
   SUBROUTINE SPOIT; M[BUFF-2]:=B AND @7570000000000;                                             16708000 T  0000:0
                                                                                                  16708500 T  0005:0
   P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0);                                                               16710000 T  0005:0
   P(0, 0, 0, 0, 0, 0);                                                                           16710100 T  0007:2
   BUFF  :=KTRX.[15:15];                                                                          16710500 T  0009:0
   MIX   :=KTRX.[ 9:6 ];                                                                          16711000 T  0010:1
   TYPE  :=KTRX.[ 2:7 ];                                                                          16711500 T  0011:2
   KTR   :=KTRX.[15:33];                                                                          16712000 T  0012:3
   ZZSTA :=0 & (M[BUFF-2])[9:9:9];                                                                16712500 T  0014:0
   B     := M[BUFF-1];                                                                            16713000 T  0017:0
 $ SET OMIT = NOT(PACKETS)                                                                        16713499 T  0019:0
   IF MIX#63 THEN UNITNO:=PSEUDOMIX[MIX];                                                         16713500 T  0019:0
 $ POP OMIT                                                                                       16713501 T  0021:1
   STREAM(R:=BUFF-1); DS:=8LIT"INV KBD ";                                                         16714000 T  0021:1
   GO TO SITYPE];                                                                                 16714500 T  0024:0
WU:                                                                                               16715000 T  0044:2
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                              16715500 T  0044:2
WP:                                                                                               16719500 T  0044:2
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                              16720000 T  0044:2
RR:                                                                                               16721500 T  0044:2
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                              16722000 T  0044:2
   GO TO EXIT;                                                                                    16737000 T  0044:2
WR:                                                                                               16737500 T  0045:0
```

```
 $ SET OMIT = NOT(DCSPO AND DCLOG AND DATACOM)                                  16738000 T  0045:0
MX:                                                                             16739000 T  0045:0
   MIXPRINT(ZZSTA);                                                             16739500 T  0045:0
   GO TO FORGET;                                                                16740000 T  0045:3
TS:                                                                             16740500 T  0046:1
   SHEETDIDDLER(KTR,TYPE,MIX); % TS=5, PS=6, ES=7, XS=8                         16741000 T  0046:1
   MIX:=63;                                                                     16741250 T  0047:2
   GO TO EXIT;                                                                  16741500 T  0048:1
LF:                                                                             16742000 T  0048:3
   I:=3; GO TO PD;                                                              16742500 T  0048:3
LC:                                                                             16743000 T  0050:0
   I:=2; GO TO PD;                                                              16743500 T  0050:0
LS:                                                                             16744000 T  0051:1
   I:=4; GO TO PD;                                                              16744500 T  0051:1
EX:                                                                             16745000 T  0052:2
   KTR:= -KTR; I:=1;                                                            16745500 T  0052:2
PD:                                                                             16746000 T  0054:1
   PRINTDIRECTORY(KTR,I);                                                       16746500 T  0054:1
   GO TO EXIT;                                                                  16747000 T  0055:1
SM:                                                                             16747500 T  0055:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                            16748000 T  0055:3
   GO TO EXIT;                                                                  16749000 T  0055:3
PO:                                                                             16749500 T  0056:1
   TYPOP(KTR,TYPE=16); % TO=15, PO=16                                           16750000 T  0056:1
   GO TO EXIT;                                                                  16750500 T  0057:3
PG:                                                                             16751000 T  0058:1
   STREAM(Y:=KTR);                                                              16751500 T  0058:1
      BEGIN                                                                     16752000 T  0059:0
      S1:=Y;                                                                    16752500 T  0059:0
  LA: IF SC NEQ "←" THEN                                                        16753000 T  0059:1
         BEGIN                                                                  16753500 T  0059:3
         SI:=SI+1; DI:=DI+1; GO TO LA;                                          16754000 T  0059:3
         END                                                                    16754500 T  0060:2
                                                                                         16753500
      ELSE DS:=4LIT"←←←←";                                                      16755000 T  0060:2
      END;                                                                      16755500 T  0061:2
                                                                                         16752000
PGA:  STREAM(Y:=0, KTR: A:=A:=SPACE(12)+1);                                     16756000 T  0061:3
      BEGIN                                                                     16756500 T  0065:3
      S1:=KTR;                                                                  16757000 T  0065:3
   L: IF SC=" " THEN                                                            16757500 T  0066:0
         BEGIN                                                                  16758000 T  0066:2
         SI:=SI+1; GO TO L;                                                     16758500 T  0066:2
         END;                                                                   16759000 T  0067:0
                                                                                         16758000
      IF SC="←" THEN TALLY := 1 ELSE                                            16759500 T  0067:0
      IF SC="0" THEN TALLY := 1 ELSE                                            16760000 T  0068:0
         BEGIN                                                                  16760500 T  0069:0
         DS:=3CHR;                                                              16761000 T  0069:0
         IF SC="-" THEN                                                         16761500 T  0069:1
            BEGIN                                                               16762000 T  0069:3
            DS:=CHR;                                                            16762500 T  0069:3
   LL:      IF SC=" " THEN                                                      16763000 T  0070:0
               BEGIN                                                            16763500 T  0070:2
               SI:=SI+1; GO TO LL;                                              16764000 T  0070:2
               END;                                                             16764500 T  0071:0
                                                                                         16763500
            5(IF SC GEQ 0 THEN DS:=CHR ELSE JUMP OUT);                          16765000 T  0071:0
```

```
                END;

              DS:=LIT"+"; KTR:=SI;
              END;

           Y:= TALLY;
           END STREAM STATEMENT;

      IF P([KTR],STD) THEN
         BEGIN
         FORGETSPACE(A-1); GO TO FORGET;
         END;

      A:=A&A[15:33:15];
      TAPEPURGE(A);
      GO TO PGA;
AU:
 $ SET OMIT = NOT(AUXMEM)
      GO TO FORGET;
MS:
 $ SET OMIT = NOT MONITOR
      GO TO FORGET;
LN:
      STREAM(A:=0:KTR);
         BEGIN SI:=KTR; DI:=LOC A; DI:=DI+6;
         DS:=2 CHR;
         END;

      IF (T:=P).[36:6]=@37 THEN
      LOGOUT(0) ELSE
 $ SET OMIT = NOT(DISKLOG)
      IF I="ML" THEN INDEPENDENTRUNNER(P(,LOGOUTMAINT),0,128) ELSE
      GO TO ERROR;
      GO TO FORGET;
CD:
      TABLEOFCONTENTS(KTR, TYPE=23); % CD=21, PP=22, PC=23
      GO TO FORGET;
CU:
      COREPRINT((IF MIX=63 THEN -0 ELSE MIX)&ZZSTA[9:9:9]);
      GO TO FORGET;
SY:
 $ SET OMIT = NOT(STATISTICS)
      GO TO FORGET;
SL:
 $ SET OMIT = NOT(STATISTICS)
      GO TO FORGET;
RW:
      SPOIT;
      REWINDANDLOCK(KTR);
      GO TO EXIT;
CI:
 $ SET OMIT = NOT(BREAKOUT)
      CHANGEINTRINSICFILE(KTR);
      GO TO EXIT;
CT:
      TIMERELAXER(KTR,TYPE,MIX); % CT=29, XT=30, TL=31
      GO TO EXIT;
```

```
16765500 T  0073:0
                16762000
16766000 T  0073:0
16766500 T  0073:3
                16760500
16767000 T  0073:3
16767500 T  0074:0
                16756500
16768000 T  0074:1
16768500 T  0074:3
16769000 T  0075:1
16769500 T  0077:0
                16768500
16770000 T  0077:0
16770500 T  0078:3
16771000 T  0079:2
16771500 T  0080:0
16772000 T  0080:0
16773000 T  0080:0
16773500 T  0080:2
16774000 T  0080:2
16779500 T  0080:2
16780000 T  0081:0
16780500 T  0081:0
16781000 T  0082:1
16781500 T  0083:0
16782000 T  0083:1
                16781000
16782500 T  0083:2
16783000 T  0085:0
16783500 T  0086:1
16784500 T  0086:1
16785000 T  0089:1
16785500 T  0089:1
16786000 T  0091:0
16786500 T  0091:0
16787000 T  0092:2
16787500 T  0093:0
16788000 T  0093:0
16788500 T  0097:0
16789000 T  0097:2
16789500 T  0097:2
16792000 T  0097:2
16792500 T  0098:0
16793000 T  0098:0
16795500 T  0098:0
16796000 T  0098:2
16796500 T  0098:2
16797000 T  0100:0
16797500 T  0100:3
16798000 T  0101:1
16798500 T  0101:1
16801500 T  0101:1
16802000 T  0102:0
16802500 T  0102:2
16803000 T  0102:2
16803500 T  0103:3
```

```
XD:
   IF TYPE=33 THEN KTR.[CF]:=0; % XD=32, MR=33                                  16804000 T  0104:1
   DKBUSINESS(P(1,KTR));                                                        16804500 T  0104:1
   GO TO EXIT;                                                                  16805000 T  0106:3
MC:                                                                             16805500 T  0107:3
   NAMEID(I,KTR); NAMEID(J,KTR); NAMEID(J,KTR);                                 16806000 T  0108:1
   IF J.[6:6]="←" THEN GO TO ERROR;                                             16806500 T  0108:1
   IF (A:=DIRECTORYSEARCH(I,-J,4)) GEQ 64 THEN                                  16807000 T  0111:1
      BEGIN                                                                     16807500 T  0113:0
      IF J NEQ "DISK    " THEN                                                  16808000 T  0115:2
      IF(K:=DIRECTORYSEARCH(I,"DISK    ",5)) NEQ 0 THEN                       16808500 T  0116:0
         BEGIN                                                                  16809000 T  0116:3
         P(DIRECTORYSEARCH(-I,J,14),DEL);                                       16809500 T  0119:2
         FORGETSPACE(A);                                                        16810000 T  0120:0
         FORGETSPACE(K);                                                        16810500 T  0121:3
         LBMESS(I,J,-9,29,0,0,1);                                               16811000 T  0122:2
         GO FERGIT;                                                             16811500 T  0123:1
         END                                                                    16812000 T  0125:3
                                                                                16812500 T  0128:0
                                                                                                16809500
      ELSE                                                                      16813000 T  0128:0
         BEGIN                                                                  16813500 T  0128:0
         M[A INX 4]:=(*P(DUP))&2[1:46:2]&1[8:47:1];                             16814000 T  0128:2
         A:=A&EUF(-I,"DISK    ",A INX 0=1)[18:33:15];                           16815000 T  0132:3
         FORGETSPACE(DIRECTORYSEARCH(I,J,8));                                   16815500 T  0136:1
         END ELSE M[A INX 4]:=(*P(DUP))&2[1:46:2]&1[8:47:1];                    16816000 T  0138:0
                                                                                                16813500
      HEADERUNLOCK(I,"DISK    ",A);                                             16816500 T  0144:1
      LBMESS(I,J,54,I,"DISK    ",0,1);                                          16817000 T  0146:0
      END                                                                       16817500 T  0148:1
                                                                                                16808000
   ELSE LBMESS(I,J,-9,IF A=1 THEN 45 ELSE 15,0,0,1);                            16818000 T  0148:1
FERGIT:                                                                         16819300 T  0154:2
   FORGETSPACE(BUFF-1);                                                         16819400 T  0154:2
   GO TO EXIT;                                                                  16819500 T  0155:3
RS:                                                                             16820000 T  0156:1
 $ SET OMIT = NOT(BREAKOUT)                                                     16820500 T  0156:1
   GO TO EXIT;                                                                  16822000 T  0156:1
HD:                                                                             16823000 T  0156:3
   STREAM(FU:=-1,ERRTOG:=0:EULIT:=@2564000000000000,CX:=0,                      16823100 T  0156:3
          K:=KTR);                                                              16823200 T  0158:2
   BEGIN                                                                        16823300 T  0159:0
        SI:=K; GO TO L1;                                                        16823400 T  0159:0
   LO:  IF SC=" " THEN BEGIN SI:=SI+1; GO TO LO END; CI:=CX;                    16823500 T  0159:2
                                                                                                16823500
   L1:  CX:=CI; GO TO LO;                                                       16823600 T  0160:3
        IF SC="←" THEN GO EXT;                                                  16823700 T  0161:1
        DI:=LOC EULIT; TALLY:=1;                                                16823800 T  0162:0
        IF 2 SC=DC THEN % AN FU SPECIFIED                                       16823900 T  0162:2
        BEGIN                                                                   16824000 T  0163:0
             CX:=CI; GO TO LO;                                                  16824100 T  0163:0
             IF SC GEQ 0 THEN IF SC<12 THEN                                     16824200 T  0163:2
             BEGIN                                                              16824300 T  0164:2
                  SI:=SI+1; DI:=LOC EU;                                         16824400 T  0164:2
                  IF SC GEQ 0 THEN IF SC<12 THEN                                16824500 T  0165:0
                  TALLY:=2 ELSE GO TO ERR;                                      16824600 T  0166:0
                  SI:=SI-1; CX:=TALLY;                                          16824700 T  0166:3
                  DS:=CX OCT; GO EXT;                                           16824800 T  0167:1
```

```
                END ;                                                                  16824900 T  0168:0
                                                                                                   16824300
              END;                                                                     16825000 T  0168:0
                                                                                                   16824000
      FRR:  ERRTOG:=TALLY;                                                             16825100 T  0168:0
      EXT:                                                                             16825200 T  0168:1
      END;                                                                             16825300 T  0168:1
                                                                                                   16823300
      IF P THEN GO TO  ERROR;                                                          16825400 T  0168:2
      IF (HN1:=P+1)>0 THEN IF HN1 LEQ NEUP.[FF] THEN                                   16825500 T  0169:1
      HN2:=HN1 ELSE GO TO ERROR ELSE                                                   16825600 T  0172:2
      BEGIN                                                                            16825700 T  0173:3
           HN1:=1;                                                                     16825800 T  0176:0
           HN2:=NEUP.[FF];                                                             16825900 T  0176:3
      END;                                                                             16826000 T  0178:0
                                                                                                   16825700
    $ SET OMIT = NOT SHAREDISK                                                         16826100 T  0178:0
      FOR I:=HN1 STEP 1  UNTIL HN2 DO                                                  16826500 T  0178:0
      IF NOT (NT2:=U[I]).EUNP THEN  % NOT A DUMMY EU                                   16826600 T  0179:0
      BEGIN                                                                            16826700 T  0180:3
           INT4:=(INT1:=NT2,STARTWRD) MOD 30;                                          16826800 T  0181:1
           INT2:=30-(K:=(NT2 AND NUMENTM)+R4) MOD 30+K;                                16826900 T  0183:2
           J:=NT1 DIV 30+USERDISKBOTTOM;                                               16827000 T  0187:1
           FIXARRAY(UT,R,A);                                                           16827100 T  0189:0
    $ SET OMIT = NOT SHAREDISK                                                         16827200 T  0193:1
           DISKWAIT(-R,A,J); J:=0;                                                     16827900 T  0193:1
           FOR NT1:=K-2 STEP -1 UNTIL R4 DO INT3:=J+UT[NT1].[3:19];                    16828000 T  0195:2
           STREAM(A:=I-1,B:=IF U[I].SPEED=1 THEN "F" ELSE "S",                         16828100 T  0202:1
                C:=U[I].[38:10]-1,D:=J,E:=U[I].[1:20],                                 16828200 T  0206:1
                F:=A:=SPACE(10));                                                      16828300 T  0209:0
           BEGIN                                                                       16828400 T  0211:2
                SI:=LOC A; DS:=4 LIT" EU "; DS:=2 DEC;                                 16828500 T  0211:2
                A:=DI; DI:=DI-2; DS:=FILL; DI:=A;                                      16828600 T  0212:3
                DS:=LIT"("; SI:=SI+7; DS:=CHR;                                         16828700 T  0213:3
                DS:=10 LIT"), NO. AV=="; DS:=3 DEC;                                    16828800 T  0214:3
                A:=DI; DI:=DI-3; DS:=2 FILL; DI:=A;                                    16828900 T  0216:2
                DS:=11 LIT", TOTAL AV=="; DS:=6 DEC;                                   16829000 T  0217:2
                A:=DI; DI:=DI-6; DS:=5 FILL; DI:=A;                                    16829100 T  0219:2
                DS:=14 LIT" SEGS, MAX AV=="; DS:=6 DEC;                                16829200 T  0220:2
                A:=DI; DI:=DI-6; DS:=5 FILL; DI:=A;                                    16829300 T  0222:3
                DS:=6 LIT" SEGS.=";                                                    16829400 T  0223:3
           END;                                                                        16829500 T  0224:3
                                                                                                   16828400
            FORGETSPACE(R);                                                            16829550 T  0225:0
           SPOUT(A&ZZSTA[9:9:9]);                                                      16829600 T  0225:3
      END; % ELSE IF HN1=HN2 THEN GO TO ERROR;                                         16829700 T  0228:0
                                                                                                   16826700
     $ SET OMIT = NOT SHAREDISK                                                        16829800 T  0230:1
      HN1:=KTRX.[9:6]; % SET "MIX" BACK TO ORIGINAL VALUE                              16830100 T  0230:1
      GO TO FORGET;                                                                    16830200 T  0231:2
    RA:                                                                                16850300 T  0232:0
      IF MIX=P2MIX THEN                                                                16850700 T  0232:0
         BEGIN                                                                         16850800 T  0232:3
         HALT; HALTED := TRUE;                                                         16850900 T  0233:1
         END;                                                                          16851000 T  0234:2
                                                                                                   16850800
      SEGDICT := PRT[MIX,4];                                                           16851100 T  0234:2
```

```
IF P( M[LOCN]:=PRT[MIX,8].[CF]], TOP, XCH, DEL ) THEN SEG:=ADR:=0                16851200 T  0236:0
ELSE                                                                             16851300 T  0240:0
   DO BEGIN                                                                      16851400 T  0241:1
   IF P(M[LOCN], TOP, XCH, 0, INX, .ADR, STD) THEN % OVERLAID RCW                16851500 T  0241:3
      BEGIN                                                                      16851600 T  0244:1
      IF NOT M[LOCN].[33:1] THEN % NOT TYPE 13 INTRINSIC                         16851700 T  0244:3
         BEGIN                                                                   16851800 T  0246:2
         SEG:=ADR; % SEGNO IN RCW                                                16851900 T  0247:0
         R:=0; % ADJUST FOR SUBSTRACTION BELOW                                   16852000 T  0247:3
         ADR:=M[M[LOCN].MOM].[CF];  % REL.ADR.IN MSCW                           16852100 T  0248:2
         END                                                                     16852200 T  0251:3
                                                                                                16851800
      ELSE SEG := (-1);                                                          16852300 T  0251:3
      END                                                                        16852400 T  0253:1
                                                                                                16851600
   ELSE                                                                          16852500 T  0253:1
      BEGIN % PRESENT RCW, CHECK THE LINKS                                       16852600 T  0253:1
      R:=0;                                                                      16852700 T  0253:3
      WHILE (SEG:=M[R].[CF]) LSS ADR DO                                          16852800 T  0254:2
      IF SEG GTR R THEN R:=SEG ELSE PUNT([PUNTER[25]]);                          16852900 T  0257:2
      SEG:=IF M[R].AREATYPEF=CODEAREAV THEN M[R+1].[CF] ELSE 0; %                16853000 P  0261:2
      IF P(PRTROW[MIX],0,INX,DUP) GTR R AND P(XCH) LSS M[R].[CF] THEN            16853100 T  0267:1
      R4 := "PRT    ";                                                           16853200 T  0269:2
      R:=R+2;                                                                    16853300 T  0272:2
      END;                                                                       16853400 T  0273:3
                                                                                                16852600
   IF PRT[MIX,8].[CF] NEQ LOCN OR M[LOCN-1].MSFF THEN % MARKED                   16853500 T  0273:3
   DO LOCN:=M[LOCN].MOM UNTIL NOT M[LOCN].MSFF; % GET LAST MSCW                  16853600 T  0278:0
   LOCN:=M[LOCN].MOM; % POINT LOCN TO NEXT RCW,JUST IN CASE.                     16853700 T  0282:3
   END                                                                           16853800 T  0284:3
                                                                                                16851400
   UNTIL                                                                         16853900 T  0284:3
   (IF SEG NEQ 0 THEN IF SEG = (-1) THEN 0                                       16854000 T  0284:3
   ELSE (SEGDICT[0] LSS SEG OR NOT SEGDICT[SEG].PBIT)                            16854100 T  0287:0
   ELSE P(M[R-2].[3:12], DUP) NEQ @700 AND P(XCH) NEQ @1500)                     16854200 T  0289:1
   OR LOCN=0;                                                                    16854300 T  0294:3
   ADR := ADR-R;                                                                 16854400 T  0296:3
   STREAM(MIX, NAM:=[JAR[MIX,0]], T:=0, SEG, ADR,                                16854600 T  0298:0
         SYL:=M[PRT[MIX,8]].[10:2], TOG1:=(R4 NEQ 0), R4,                        16854700 T  0300:1
         TOG2:=(SEG LEQ 0), D:=BUFF-1);                                          16854800 T  0303:2
      BEGIN                                                                      16854900 T  0305:1
      DS:=LIT" ";                                                                16855000 T  0305:1
      SI:=NAM; 2(SI:=SI+1; DS:=7CHR; DS:=LIT"/"); DI:=DI-1;                      16855100 T  0305:3
      DS:=2LIT" ="; SI:=LOC MIX; DS:=2DEC;                                       16855200 T  0307:3
      TOG1(SI:=LOC R4; SI:=SI+1; DS:=LIT" "; DS:=7CHR;JUMP OUT TO XXIT);         16855300 T  0308:3
      TOG2(DS:=14LIT" NOT AVAILABLE"; JUMP OUT TO XXIT);                         16855400 T  0311:1
      DS:=5LIT" SEG="; SI:=LOC SEG; DS:=4DEC;                                    16855500 T  0314:2
      T:=DI; DI:=DI-4; DS:=3FILL; DI:=T;                                         16855600 T  0316:0
      DS:=5LIT" ADR="; DS:=4DEC;                                                 16855700 T  0317:0
      T:=DI; DI:=DI-4; DS:=3FILL; DI:=T;                                         16855800 T  0318:1
      DS:=LIT"!"; SI:=SI+7; DS:=CHR;                                             16855900 T  0319:1
XXIT: DS:=LIT"←";                                                                16856000 T  0320:1
      END STREAM STATEMENT;                                                      16856100 T  0320:3
                                                                                                16854900
   IF HALTED THEN NOPROCESSTOG := NOPROCESSTOG -1;                               16856200 T  0321:0
   GO TO ERROR;                                                                  16856300 T  0323:0
EI:                                                                %139-         16866400 C  0325:0
 $ SET OMIT = NOT(BREAKOUT)                                        %139-         16866405 C  0325:0
```

```
   GO TO FORGET;                                                          %139-
FORGET:
   STREAM(T:=BUFF-1);  DS:= LIT "←";
 $ SET OMIT = NOT(PACKETS)
   UNITNO:=0;
 $ POP OMIT
ERROR:
   SPOUTER((BUFF-1) INX ZZSTA,UNITNO,1);
EXIT:
   IF(MIX>0)AND(MIX≤MIXMAX)THEN TABCNT[MIX]←TABCNT[MIX]-1;                %113-
   KILL([MSCW]);
   END PROCEDURE KEYIN2;
```

```
16866530 C  0325:0
16902500 T  0325:2
16902600 T  0325:2
16902649 T  0328:0
16902650 T  0328:0
16902651 T  0328:3
16902700 T  0328:3
16902800 T  0328:3
16902900 T  0331:1
16902950 P  0331:1
16903000 T  0337:2
16903100 T  0338:1
                    16691000
SIZE= 0339 WORDS
```

```
                REAL PROCEDURE KEYIN(B); VALUE B; REAL B;                                                    16904000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00494
                % THIS PROCEDURE FUNCTIONS AS A DRIVER FOR AUXILIARY PROCEDURES                               16904500 T  0000:0
                % "KEYIN0","KEYIN1" AND "KEYIN2". PROCEDURES "KEYIN0" AND "KEYIN1"                           16905000 T  0000:0
                % ARE CALLED DIRECTLY, AND PROCEDURE "KEYIN2" IS CALLED AS AN                                16905500 T  0000:0
                % INDEPENDENT RUNNER.                                                                        16906000 T  0000:0
                  BEGIN                                                                                      16906500 T  0000:0
                  REAL    RCW    =        + 0;                                                              16907000 T  0000:0
STACK(F+0) = RCW
                  REAL MSCW=-2;                                                                              16907250 T  0000:0
STACK(F-2) = MSCW
                  INTEGER ZZSTA = RCW    + 2;                                                                16907500 T  0000:0
STACK(F+2) = ZZSTA
                  REAL    BUFF   = ZZSTA + 1,                                                                16908000 T  0000:0
STACK(F+3) = BUFF
                          KTR    = BUFF  + 1,                                                                16908500 T  0000:0
STACK(F+4) = KTR
                          TYPE   = KTR   + 1,                                                                16909000 T  0000:0
STACK(F+5) = TYPE
                          MIX    = TYPE  + 1,                                                                16909500 T  0000:0
STACK(F+6) = MIX
                          A      = MIX   + 1, MIXCODE = A, KTRX = A,                                         16910000 T  0000:0
STACK(F+7) = A
STACK(F+7) = MIXCODE
STACK(F+7) = KTRX
                          I      = A     + 1,                                                                16910500 T  0000:0
STACK(F+10) = I
                          J      = I     + 1, RJEOK   = J,                                                   16911000 T  0000:0
STACK(F+11) = J
STACK(F+11) = RJEOK
                          K      = J     + 1, PROCED  = K;                                                   16911500 T  0000:0
STACK(F+12) = K
STACK(F+12) = PROCED
                    NAME  ADDR   = K     + 1; ARRAY BUFA = BUFF[*];                                          16912000 T  0000:0
STACK(F+13) = ADDR
STACK(F+3) = BUFA
                  INTEGER T      = ADDR  + 1;                                    %801-                       16912100 C  0000:0
STACK(F+14) = T
                                                                                                             16912500 T  0000:0
                 $ SET OMIT = NOT(PACKETS)                                                                   16912999 T  0000:0
                   DEFINE UNITNO = PSEUDOMIX[MIX]#;                                                          16913000 T  0000:0
                 $ POP OMIT                                                                                  16913001 T  0000:0
                                                                                                             16913500 T  0000:0
                   LABEL START, CHECK, SWITCHIT, FORGET, ERROR, TBLERR, EXIT;                                16914000 T  0000:0
                   LABEL RESTART;                                                  %801-                       16914100 C  0000:0
                                                                                                             16914500 T  0000:0
                   P(B, 0, 0, 0, 0, 0, 0, 0, 0, 0); % NOTE P(B)=ZZSTA                                        16917500 T  0000:0
                    P(0);  % T                                                    %801-                       16917600 C  0002:3
                 START::                                                                                     16918000 T  0003:0
                    IF ABS(B) GTR 1 THEN BUFF:=B.[FF] ELSE                                                   16918500 T  0003:0
                      BEGIN                                                                                  16919000 T  0005:3
                      BUFF := GETSPACE(60,KEYINBUFFAREAV,0)+3; %                   %167-                       16919500 P  0006:1
                 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                         16920000 T  0008:2
                      MYBUFF INX NOT 2].[9:6] := 0;                                                          16921000 T  0008:2
                      P(WAITIO(BUFF&1[24:47:1],0,25), DEL);                                                  16921500 T  0012:0
                      END;                                                                                   16922000 T  0014:2
                                                                                                                       16919000
```

```
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                                    16922499 T  0014:2
RESTART;                                                                                    %801-      16925100 C  0014:2
   M[BUFF-2]:=0&ZZSTA[9:9:9];                                                                          16925500 T  0014:2
   KTR     := BUFF;                                                                                    16926000 T  0017:2
   TYPE ← KEYINSCAN(KTR,MIX);                                                               %801-      16926010 C  0018:1
   IF (PROCED←TYPE.[1:5])=1 AND ((I←TYPE.[CF])=8 OR I=VCC                                   %801-      16926020 C  0019:3
      OR I=33 OR I=34) OR (PROCED=0 AND I=1) THEN ELSE % SS,CC,OC,FE,AX                                16926022 C  0023:3
   BEGIN                                                                                    %801-      16926030 C  0029:0
    STREAM(KTR,I:);                                                                         %801-      16926040 C  0029:2
    BEGIN  SI←KTR;                                                                          %801-      16926050 C  0030:3
         8(60(IF SC="'" THEN                                                                %801-      16926060 C  0031:0
              BEGIN  L: SI←SI+1;                                                            %801-      16926070 C  0032:0
                     63(SI←SI+1; IF SC="'" THEN JUMP OUT;                                   %801-      16926080 C  0032:1
                                 IF SC="←" THEN JUMP OUT 3 TO YECH);                                  16926090 C  0033:3
                     SI←SI+1;                                                               %801-      16926100 C  0035:2
                     IF SC="'" THEN GO TO L;                                                %801-      16926110 C  0035:3
              END;                                                                          %801-      16926120 C  0036:2
                                                                                                                  16926070
              IF SC="←" THEN JUMP OUT 2 TO YECH;                                            %801-      16926125 C  0036:2
              IF SC=";" THEN                                                                %801-      16926130 C  0037:3
              BEGIN                                                                         %801-      16926140 C  0038:1
                   I←SI;  TALLY←1;                                                          %801-      16926150 C  0038:1
                   DI←I;  DS←LIT "←";                                                       %801-      16926152 C  0038:3
                X: SI←SI+1; IF SC=";" THEN GO TO X;  I←SI;                                  %801-      16926154 C  0039:2
                   JUMP OUT 2 TO YECH;                                                      %801-      16926160 C  0040:3
              END;  SI←SI+1));                                                              %801-      16926170 C  0041:2
                                                                                                                  16926140
              YECH:  KTR←TALLY;                                                             %801-      16926180 C  0042:1
   END STREAM;                                                                              %801-      16926190 C  0042:2
                                                                                                                  16926050
   I←P; IF P THEN                                                                           %801-      16926200 C  0042:3
   STREAM(I, T←T←GETSPACE(62,0,0)+3);                                                       %801-      16926210 C  0043:1
   BEGIN                                                                                    %801-      16926220 C  0046:3
         SI←I;                                                                              %801-      16926230 C  0046:3
         8(60(IF SC="←" THEN JUMP OUT 2 TO L ELSE DS←CHR)); L:DS←LIT"←";                     %801-      16926240 C  0047:0
   END STREAM;                                                                              %801-      16926250 C  0050:1
                                                                                                                  16926220
   END CHECK FOR KEYIN RECYCLE;                                                             %801-      16926270 C  0050:2
                                                                                                                  16926030
   IF PROCED=7 THEN GO TO TBLERR;                                                           %801-      16926500 P  0050:2
   KTR     := KTR & BUFF[15:33:15];                                                                    16927000 T  0051:3
   RJEOK   := (MIXCODE:=TYPE.[6:6]) GEQ 4;                                                             16927500 T  0053:2
   MIXCODE := (MIXCODE ×(MIX NEQ 63)) AND 3; % ACTUAL MIX CODE                                          16928000 T  0055:3
   TYPE    := TYPE.[CF];                                                                                16928500 T  0058:0
   IF TYPE=0 OR MIX.[1:2]≠0 THEN  % EMPTY OR ERROR                                                      16929000 T  0059:1
      BEGIN                                                                                             16929500 T  0061:2
      IF MIX.[1:1] THEN % EMPTY BUFFER                                                                  16930000 T  0062:0
         BEGIN                                                                                          16930500 T  0062:3
         KEYIN:=TRUE; GO TO FORGET;                                                                     16931000 T  0063:1
         END                                                                                            16933500 T  0064:2
                                                                                                                  16930500
      ELSE GO TO ERROR; % TYPE=0 OR MIX.[2:1]                                                           16934000 T  0064:2
      END;                                                                                              16934500 T  0064:2
                                                                                                                  16929500
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                                    16935000 T  0064:2
CHECK:                                                                                                  16946600 T  0064:2
   IF MIXCODE=1 OR MIXCODE=2 THEN % MIX INDEX REQUIRED                                                  16947000 T  0064:2
```

```
      BEGIN                                                                                    16947500 T  0066:1
      IF MIX GTR MIXMAX THEN GO TO ERROR;                                                      16948000 T  0066:3
      IF JAR[MIX,*]=0 THEN GO TO ERROR; % JOB MUST BE RUNNING                                  16948500 T  0068:0
      IF MIXCODE=1 THEN % JOB SHOULD BE WAITING FOR THIS INPUT                                 16949000 T  0069:2
         BEGIN                                                                                 16949500 T  0070:1
         J:=REPLY[MIX];                                                                        16950000 T  0070:3
         WHILE J LSS 0 DO                                                                      16950500 T  0071:3
            BEGIN                                                                              16951000 T  0073:0
            IF J.[42:6]=TYPE THEN GO TO SWITCHIT;                                              16951500 T  0073:0
            J:=-J.[6:36]; % SHIFT RIGHT                                                        16952000 T  0074:3
            END;                                                                               16952500 T  0076:1
                                                                                                           16951000
         IF TYPE=VWY THEN % "WY", NOT WAITING FOR IT                                           16953000 T  0076:3
            BEGIN                                                                              16953500 T  0077:2
            M[BUFF-1]:=FLAG(-"WY NOT"&MIX[6:42:6]);                                            16954000 T  0078:0
            M[BUFF]  :=0&(@1437)[1:37:11];                                                     16954500 T  0081:2
            END;                                                                               16955000 T  0084:0
                                                                                                           16953500
         GO TO ERROR;                                                                          16955500 T  0084:0
      END; % IF MIXCODE = 1 OR 2                                                               16955600 T  0086:0
                                                                                                           16949500
SWITCHIT:                                                                                      16955800 T  0086:0
      TABCNT[MIX]:=TABCNT[MIX]+1;                                                              16956000 T  0086:0
 $ SET OMIT = NOT(PACKETS)                                                                     16956019 T  0089:1
      IF PSEUDOMIX[MIX]≠0 THEN                                                                 16956020 T  0089:1
         BEGIN                                                                                 16956030 T  0090:1
         STREAM(BUFF, J ← J ← SPACE(16)) ; %                                      %712-       16956040 P  0090:3
              BEGIN SI←BUFF; DS←20 LIT "+OPERATOR KEYED IN: ";                    %712-       16956050 P  0093:3
                  2(50(IF SC="←" THEN JUMP OUT 2 TO AXET; DS←CHR));%712-          16956060 P  0096:3
    AXET:           DS←LIT "←" ; %                                                %712-       16956070 P  0099:1
              END ; %                                                             %712-       16956080 P  0099:3
                                                                                                           16956050
              SPOUTER(J,UNITNO,64); %                                             %712-       16956090 P  0100:0
         END ; %                                                                  %712-       16956100 P  0101:2
                                                                                                           16956030
 $ POP OMIT                                                                                    16956121 T  0101:2
      END; % IF MIX INDEX REQUIRED                                                             16956500 T  0101:2
                                                                                                           16947500
   KTRX := KTR & MIX[9:42:6] & TYPE[2:41:7];                                                   16957500 T  0101:2
   IF PROCED=2 THEN                                                                            16958000 T  0104:1
      BEGIN                                                                                    16958500 T  0105:0
        IF JOBNUM ≥ JOBNUMAX-10 THEN % BED IS GETTING FULL                     %801-       16958600 C  0105:2
           BEGIN % LETS IGNORE THIS MESSAGE                                    %801-       16958610 C  0106:3
                M[BUFF-1]←-FLAG("WAIT...");                                    %801-       16958620 C  0107:1
                GO TO ERROR;                                                   %801-       16958630 C  0109:3
           END;                                                                %801-       16958640 C  0112:0
                                                                                                           16958610
      M[BUFF-1] := B; % PASS VALUE TO PROCEDURE                                            16959000 T  0112:0
      INDEPENDENTRUNNER(NT1:=P(,,KEYIN2),KTRX,140);                                        16959500 T  0114:0
      END                                                                                  16960000 T  0115:3
                                                                                                           16958500
   ELSE IF PROCED=1 THEN KEYIN1(B,KTRX) ELSE KEYIN0(B,KTRX);                               16960500 T  0115:3
   GO TO EXIT;                                                                             16961000 T  0120:0
TBLERR:                                                                                    16961500 T  0120:2
   STREAM(KTR,B:=BUFF-1);                                                                  16962000 T  0120:2
      BEGIN                                                                                16962500 T  0122:0
      S1:=KTR; SI:=SI-2; DS:=LIT"*"; DS:=2CHR;                                             16963000 T  0122:0
```

```
      DS:=21LIT" NOT COMPILED IN MCP←";                                                  16963500 T  0123:1
      END;                                                                               16964000 T  0126:1
                                                                                                     16962500
FRROR:
   SPOUT( (BUFF-1) INX (0&ZZSTA[9:9:9]));                                                16964500 T  0126:2
   KEYIN := TRUE;                                                                        16965000 T  0126:2
   GO TO EXIT;                                                                           16965500 T  0129:3
FORGET:                                                                                  16966000 T  0130:2
   STREAM(T:=BUFF:=BUFF-1); DS:=LIT"←";                                                  16966500 T  0131:0
   SPOUT(BUFF INX (0&ZZSTA[9:9:9]));                                                     16967000 T  0131:0
EXIT:                                                                                    16967500 T  0133:2
   IF T>0 THEN % ANOTHER MESSAGE                                                         16968000 T  0136:1
   BEGIN                                                                  %801-          16968100 C  0136:1
         BUFF←T; T←0;                                                     %801-          16968110 C  0137:0
         GO RESTART;                                                      %801-          16968120 C  0137:2
   END;                                                                   %801-          16968130 C  0139:0
                                                                          %801-          16968140 C  0139:2
                                                                                                     16968110
   IF ABS(B) LEQ 1 THEN                                                                  16968500 T  0139:2
      BEGIN                                                                              16969000 T  0140:2
      IF (KEYBOARDCOUNTER:=KEYBOARDCOUNTER-1) GTR 0 THEN GO TO START;                    16969500 T  0141:0
      KEYBOARDCOUNTER:=0;                                                                16970000 T  0143:1
      END;                                                                               16970500 T  0144:0
                                                                                                     16969000
   IF B THEN KILL(rMSCW]);                                                               16971000 T  0144:0
   END PROCEDURE KEYIN;                                                                  16971500 T  0145:2
                                                                                                     16906500
                                                                                                SIZE= 0146 WORDS
```

```
                REAL LBMSGCONTROL;                                                                  16995000 T  0000:0
PRT(636) = LBMSGCONTROL
                PROCEDURE LBMESS(FN,SN,I1,I2,E,UNITNO,X);                                           17000000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00499
                     VALUE FN,SN,I1,I2,E,UNITNO,X;                                                  17000200 T  0000:0
                     REAL  FN,SN,I1,I2,E,UNITNO,X;                                                  17000400 T  0000:0
                %*************************************************************************         17000405 T  0000:0
                %          PARAMETERS                                                               17000410 T  0000:0
                %       I1     I2     E              FORM OF MESSAGE                               17000420 T  0000:0
                %     ------ ------ ------          ---------------                               17000430 T  0000:0
                %     LSS 0    0                    . FN/SN I1                                      17000440 T  0000:0
                %     LSS 0  GTR 0    0             . FN/SN NOT I1(I2)                              17000450 T  0000:0
                %     LSS 0  GTR 0  NEQ 0           . FN/SN NOT I1(I2), E                           17000460 T  0000:0
                %     GTR 0    0      0               FN/SN I1                                      17000470 T  0000:0
                %     GTR 0    0    NEQ 0             FN/SN I1, E                                   17000480 T  0000:0
                %     GTR 0  GTR 0                    FN/SN I1 I2                                   17000490 T  0000:0
                %    52 OR 54                         FN/SN I1 I2/E                                 17000500 T  0000:0
                %NOTE: IF I1 IS NEITHER 52 NOR 54 THEN I1 AND I2 ARE INDICES INTO TABL              17000510 T  0000:0
                %                                 ELSE I2 AND E ARE MFID AND FID.                   17000520 T  0000:0
                %*************************************************************************         17000530 T  0000:0
                  BEGIN                                                                             17000600 T  0000:0
                     REAL T, A, COUNT;                                                              17000800 T  0000:0
STACK(F+1) = T
STACK(F+2) = A
STACK(F+3) = COUNT
                     LBMSGCONTROL.[FF] := COUNT := LBMSGCONTROL.[FF] + 1;                           17000900 T  0000:0
                     IF NOT (LBMSGCONTROL.[2:1]) THEN   % ITS NOT IN CORE --                        17001000 T  0003:2
                        IF COUNT > 1 THEN BEGIN                                                     17001300 T  0004:2
                           SLEEP([LBMSGCONTROL], @1000000000000000);                                17001400 T  0006:1
                            % WAIT - SOMEONE ELSE IS GETTING IT                                     17001500 T  0007:3
                        END ELSE BEGIN   % GET IT YOURSELF                                          17001600 T  0007:3
                                                                                                                 17001300
                           A := MESSAGETABLE[4].[8:10];                                             17002000 T  0010:0
                           LBMSGCONTROL := (GETSPACE(A,2,0)+2) & LBMSGCONTROL[FTF];                 17002600 T  0011:2
$VOID                                                                                               17002800 T  0014:1
                           DISKWAIT(-(LBMSGCONTROL.[CF]), A, MESSAGETABLE[4].[22:26]);              17003000 T  0014:1
                           LBMSGCONTROL.[2:1] := 1;  %  MARK PRESENT                                 17003050 T  0017:0
                           M[LBMSGCONTROL-1] := P(.LBMSGCONTROL) & A[CTF]; %LINK WD 2               17003100 T  0018:3
                           M[LBMSGCONTROL-2] := (*P(DUP)) & @200[2:35:13];% LINK WORD 1             17003130 T  0021:1
                        END;                                                                        17003150 T  0024:2
                                                                                                                 17001600
                     STREAM                                                                         17003200 T  0024:2
                        (A := [FN], I := I1<0, TBL1 := LBMSGCONTROL INX ABS(I1), E,                 17003250 T  0024:3
                         L := I1 < 0 AND I2 ≠ 0, J := I1=52 OR I1=54,                               17003300 T  0027:0
                         B := IF P(DUP) THEN [I2] ELSE (LBMSGCONTROL INX I2),                       17003400 T  0030:2
                         T := T := SPACE(10));                                                      17003450 T  0032:3
                     BEGIN I(DS:=LIT",");  DS:=LIT" "; SI:=A;                                       17003500 T  0035:1
                        IF SC="+" THEN BEGIN DS:=LIT"=";  SI:=SI+8; END                             17003550 T  0037:1
                                                                                                                 17003550
                                  ELSE BEGIN SI:=SI+1; DS:=7CHR; END; DS:=LIT"/";                   17003600 T  0038:2
                                                                                                                 17003600
                        IF SC="+" THEN BEGIN DS:=LIT"=";  SI:=SI+8; END                             17003700 T  0039:3
                                                                                                                 17003700
                                  ELSE BEGIN SI:=SI+1; DS:=7CHR; END;                               17003750 T  0041:0
                                                                                                                 17003750
                        DS:=LIT" "; L(DS:=4LIT"NOT ");  SI:=TBL1;                                   17003800 T  0041:3
                        63(SI:=SI+1; 7(IF SC="+" THEN JUMP OUT 2 TO L1 ELSE DS:=CHR));              17003850 T  0044:0
```

```
L1:  S]:=B;
     J(IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                    17003900 T  0047:0
                                                                         17003950 T  0047:1
                                                                                     17003950
                  ELSE BEGIN SI:=SI+1; DS:=7CHR END; DS:=LIT"/";         17004000 T  0049:0
                                                                                     17004000
       IF SC="+" THEN BEGIN DS:=LIT"="; SI:=SI+8; END                    17004050 T  0050:1
                                                                                     17004050
                  ELSE BEGIN SI:=SI+1; DS:=7CHR END; JUMP OUT TO L3);    17004100 T  0051:2
                                                                                     17004100
     L(DS:=LIT"(");                                                      17004150 T  0053:0
     63(SI:=SI+1; 7(IF SC="+" THEN JUMP OUT 2 TO L2 ELSE DS:=CHR));      17004200 T  0054:1
L2:  L(DS:=LIT")"); SI:=LOC F; SI:=SI+5;                                 17004250 T  0057:1
     IF SC NEQ "0" THEN BEGIN DS:=2LIT", "; DS:=3CHR; END;               17004300 T  0059:0
                                                                                     17004300
L3:  DS:=LIT"←";                                                         17004600 T  0060:1
  END; %STREAM                                                           17005200 T  0060:3
                                                                                     17003500
  SPOUTER(TRUNITNO[9:9:9],UNITNO,X);                                     17005400 T  0061:0
  LBMSGCONTROL.[FF] := LBMSGCONTROL.[FF] + 1;                            17005600 T  0063:1
END; %LIBMSG                                                             17007000 T  0065:2
                                                                                     17000600
                                                                                SIZE= 0066 WORDS
```

```
                PROCEDURE STOPM(NCS); VALUE NCS; REAL NCS;                                                  17900000 T  0000:0
                                                                                                            17900500 T  0000:0
                                                                                                  START OF REL SEGMENT: DISK ADDRESS = 00502
                   BEGIN                                                                                    17901000 T  0000:0
                   INTEGER PROTY;                                                                           17901500 T  0000:0
STACK(F+1) = PROTY
                   REAL B;                                                                                  17902000 T  0000:0
STACK(F+2) = B
                   LABEL AROUND,OUTIT;                                                                      17902500 T  0000:0
                 $ SET OMIT = NOT(WORKSET)                                                                  17903000 T  0000:0
                   REAL N, AUTOSTOP;                                                                        17903500 T  0000:0
STACK(F+3) = N
STACK(F+4) = AUTOSTOP
                   AUTOSTOP := (WKSETSTOPJOBS AND TWO(P1MIX)) NEQ 0;                                        17904000 T  0000:0
                   JAR[P1MIX,9].[3:1]:=1; % MARK IT STOPPED                                                 17904500 T  0003:2
                   WKSETSWITCHTIME := CLOCK + P(RTR);                                                       17904600 T  0006:2
                 $ POP OMIT % WORKSET                                                                       17905000 T  0008:1
                   PROTY := PRYOR[P1MIX]; % SAVE THE PRIORITY LEVEL                                         17905500 T  0008:1
                    PRYOR[P1MIX]:=@1777;                                                                    17906000 T  0009:1
                    IF NOTERMSET(P1MIX) THEN PRTROW[P1MIX].[PSF]:=0;                                        17906100 T  0010:2
                   IF JAR[P1MIX,9].[1:1] THEN                                                               17906150 T  0015:0
                   BEGIN                                                                                    17906200 T  0016:2
                        COMPLEXSLEEP((TERMSET(P1MIX) OR JAR[P1MIX,9].[1:1]=0));                             17906250 T  0017:0
15114700     ACCIDENTAL ENTRY AT 0
                        GO OUTIT;                                                                           17906300 T  0025:3
                   END;                                                                                     17906350 T  0026:1
                                                                                                                        17906200
                AROUND:                                                                                     17906500 T  0026:1
                   STREAM(J:=JARROW[P1MIX], P1MIX,                                                          17907000 T  0026:1
                 $ SET OMIT = NOT(WORKSET)                                                                  17907500 T  0027:1
                        AUTOSTOP,                                                                           17908000 T  0027:1
                 $ POP OMIT % WORKSET                                                                       17908500 T  0027:2
                        R := B := SPACE(10));                                                               17909000 T  0027:2
                      BEGIN                                                                                 17909500 T  0030:0
                 $ SET OMIT = NOT(WORKSET)                                                                  17910000 T  0030:0
                      AUTOSTOP(DS:=11LIT"#AUTO-STOP "; JUMP OUT TO L1);                                     17910500 T  0030:0
                 $ POP OMIT % WORKSET                                                                       17911000 T  0033:0
                      DS:=13LIT"#OPRTR ST-ED ";                                                             17911500 T  0033:0
                 L1:  SI:=J; 2(SI:=SI+1; DS:=7CHR; DS:=LIT"/");                                             17912000 T  0035:0
                      DI:=DI-1; DS:=LIT"="; SI:=LOC P1MIX; DS:=2DEC;                                        17912500 T  0036:3
                      DS:=LIT"+"; DI:=DI-3; DS:=FILL;                                                       17913000 T  0038:0
                      END STREAM STATEMENT;                                                                 17913500 T  0039:0
                                                                                                                        17909500
                   SPOUT(B);                                                                                17914000 T  0039:1
                   IF AUTODS THEN REPLY[P1MIX]←VOK ELSE                                          %747-      17914100 C  0040:2
                   BEGIN                                                                         %747-      17914200 C  0043:0
                   REPLY[P1MIX]:= -VWY & VOK[36:42:6];                                                      17914500 T  0043:2
                    COMPLEXSLEEP((TERMSET(P1MIX) OR REPLY[P1MIX] GEQ 0));                                   17915000 T  0046:0
17906250     ACCIDENTAL ENTRY AT 0
                   END;                                                                          %747-      17915100 C  0053:3
                                                                                                                        17914200
                    IF NOTERMSET(P1MIX) THEN % MUST BE "WY" OR "OK"                                         17915500 T  0053:3
                      BEGIN                                                                                 17916000 T  0055:1
                 $ SET OMIT = NOT(WORKSET)                                                                  17916500 T  0055:3
                      IF AUTOSTOP THEN                                                                      17917000 T  0055:3
                         IF REPLY[P1MIX]=VWY THEN GO AROUND ELSE ELSE                                       17917500 T  0056:0
                 $ POP OMIT % WORKSET                                                                       17918000 T  0058:0
```

```
      IF NOT WHYSLEEP(VWY&VOK[36:42:6]) THEN GO AROUND;                    17918500 T  0058:0
      REPLY[P1MIX]:=0;                                                     17919000 T  0060:3
OUTIT:                                                                     17919100 T  0062:0
      PRYOR[P1MIX]:=PROTY;                                                 17919500 T  0062:0
 $ SET OMIT = WORKSET                                                      17920000 T  0063:1
 $ SET OMIT = NOT(WORKSET)                                                 17921500 T  0063:1
      JAR[P1MIX,9].[3:1]:=0; % MARK IT RUNNING                             17922000 T  0063:1
      OLAYTIME[P1MIX]:= (*P(DUP)) × 0.80;                                  17922500 T  0066:1
      % SET THE OLAY TIME BACK NOW TO PREVENT THIS                        17923500 T  0068:1
      % JOB FROM BEING IMMEDIATELY ST-ED AGAIN                            17924000 T  0068:1
      END                                                                  17924500 T  0068:1
                                                                                          17916000
  ;                                                                %138-   17925000 P  0068:1
  FOR N:=0 STEP 1 UNTIL STQUEMAX DO                                        17925500 T  0068:1
     IF STQUE[N] = P1MIX THEN STQUE[N] := 0; % REMOVE FROM QUEUE           17926000 T  0070:0
  WKSETSWITCHTIME := CLOCK+P(RTR);                                         17926100 T  0075:0
  WKSETSTOPJOBS:=WKSETSTOPJOBS AND NOT(TWO(P1MIX));                        17926500 T  0076:3
 $ POP OMIT % WORKSET                                                      17927000 T  0079:2
  IF NCS THEN GO TO INITIATE;                                              17927500 T  0079:2
  END PROCEDURE STOPM;                                                     17928000 T  0080:3
                                                                                          17901000
                                                                                SIZE= 0081 WORDS
```

```
                PROCEDURE TISKTASK; FORWARD;                                                                    17928500 T  0000:0
                                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00505
PRT(637) = TISKTASK
                PROCEDURE FILEHOLD(A,B,TOG,LOC,HOLD);                                                           18000000 T  0000:0
                                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00505
PRT(640) = FILEHOLD
                    VALUE LOC,HOLD;                                                                             18001000 T  0000:0
                    REAL A,B,TOG,LOC,HOLD;                                                                      18002000 T  0000:0
                BEGIN                                                                                           18003000 T  0000:0
                    REAL SZ,Y,T;                                                                                18004000 T  0000:0
STACK(F+1) = SZ
STACK(F+2) = Y
STACK(F+3) = T
                 $ SET OMIT = NOT SHAREDISK                                                                     18004490 T  0000:0
                    ARRAY HOLDLIST[*];                                                                          18005000 T  0000:0
STACK(F+4) = HOLDLIST
                    LABEL SLEPE;                                                                                18006000 T  0000:0
                    DEFINE DSED=TERMSET(P1MIX)#;                                                                18007000 T  0000:0
                    IF HOLD THEN                                                                                18008000 T  0000:0
                    BEGIN                                                                                       18009000 T  0001:1
                        IF TOG THEN TOG←TOG+1 ELSE                                                              18010000 T  0001:3
                        BEGIN % MAKE AN ENTRY IN THE HOLDLIST                                                   18011000 T  0004:0
                 $ SET OMIT = NOT SHAREDISK                                                                     18011490 T  0004:2
                            IF (SZ:=(Y:=HOLDER.[FF])+1) GTR HOLDMAX THEN                                        18012000 T  0004:2
                            BYBY("HOLD LIST OVERFLOW←",19);                                                     18013000 T  0007:1
                                                                                                                            18013000
                                                                                                                            18013000
                            HOLDLIST:=[M[SPACE(SZ)]]&SZ[8:38:10];                                               18014000 T  0014:1
                            IF Y≠0 THEN                                                                         18014100 T  0018:0
                            DISKWAIT(-(HOLDLIST INX 0),Y,HOLDER.[CF]);                                          18015000 T  0018:3
                            HOLDER.[FF]:=SZ;                                                                    18016000 T  0022:0
                            HOLDLIST[Y]:=LOC.[FF]&[TOG][CTF]&SYSNO[2:46:2];                                     18017000 T  0023:1
                            DISKWAIT(HOLDLIST INX 0,SZ,HOLDER.[CF]);                                            18018000 T  0026:2
                 $ SET OMIT = NOT SHAREDISK                                                                     18018490 T  0029:0
                            FORGETSPACE(HOLDLIST);                                                              18019000 T  0029:0
                        END;                                                                                    18019500 T  0030:0
                                                                                                                            18011000
                        IF M[LOC+4],[3:1] THEN                                                                  18020000 T  0030:0
                 $ SET OMIT = NOT SHAREDISK                                                                     18020490 T  0032:0
                        ELSE                                                                                    18021000 T  0032:0
                        BEGIN M[LOC+4],[3:1]:=1;                                                                18021500 T  0032:2
                            DISKWAIT(LOC.[CF],-30,LOC.[FF]);                                                    18022000 T  0036:1
                        END;                                                                                    18022500 T  0038:3
                                                                                                                            18021500
                 $ SET OMIT = SHAREDISK                                                                         18022990 T  0038:3
                        UNLOCKDIRECTORY;                                                                        18023000 T  0038:3
                                                                                                                            18023000
                                                                                                                            18023000
                 $ POP OMIT                                                                                     18023010 T  0042:1
                        IF P1MIX≠0 THEN                                                                         18024000 T  0042:1
                        BEGIN T:=VWY&(VIF×A,[3:1])[36:42:6];                                                    18025000 T  0043:0
                            IF TOG=0 THEN                                                                       18026000 T  0046:1
                    SLEPE:  FILEMESS("#      "A,B," IN USE",0,0,0);                                             18027000 T  0047:0
                            REPLY[P1MIX]:=-T;                                                                   18028000 T  0050:0
                            COMPLEXSLEEP(REPLY[P1MIX]≥0 OR DSED OR TOG);                                        18029000 T  0051:2
17915000    ACCIDENTAL ENTRY AT TOG
                            IF NOT WHYSLEEP(T) THEN GO TO SLEPE;                                                18030000 T  0059:1
```

```
                    END ELSE                                                                    18031000 T  0060:2
                                                                                                            18025000
                    WHILE NOT TOG DO                                          %815-             18031400 C  0060:2
                    BEGIN LBMESS(ABS(A),B,45,0,"MCP",0,1);                                      18031500 T  0065:0
                          COMPLEXSLEEP((CLOCK AND @17777)=0 OR TOG);          %815-             18032000 P  0067:2
18029000    ACCIDENTAL ENTRY AT TOG
                          SLEEP([CLOCK],NOT CLOCK);                           %815-             18032010 C  0073:3
                    END;                                                                        18032500 T  0075:2
                                                                                                            18031500
               $ SET OMIT = SHAREDISK                                                           18032990 T  0078:0
                    LOCKDIRECTORY;                                                              18033000 T  0078:0
                                                                                                            18033000
                                                                                                            18033000
               $ POP OMIT
                    TOG:=TRUE;                                                                  18033010 T  0084:2
                    IF P((P1MIX NEQ 0 AND DSED),DUP)                                            18033500 T  0084:2
                      THEN FILEHOLD(A,B,TOG,LOC,2);                                             18034000 T  0085:2
                    P(RTN); % 1 ON TOP OF STACK IF DSED                                         18035000 T  0088:1
                END;                                                                            18037000 T  0091:1
                                                                                                18045000 T  0091:2
                                                                                                            18009000
               $ SET OMIT = NOT SHAREDISK                                                       18045490 T  0091:2
                 IF (SZ:=HOLDER.[FF])=0 THEN                                                    18046000 T  0091:2
               $ SET OMIT = NOT SHAREDISK                                                       18046490 T  0093:1
                 ELSE                                                                           18047000 T  0093:1
                 BEGIN IF HOLD=2 THEN DISKWAIT(-LOC.[CF],-30,LOC.[FF]);                         18047500 T  0093:3
                    HOLDLIST:=[M[SPACE(SZ)]]&SZ[8:38:10];                                       18048000 T  0100:0
                    DISKWAIT(-(HOLDLIST [NX 0),SZ,HOLDER.[CF]);                                 18049000 T  0103:3
                    IF TOG THEN FOR T:=0 STEP 1 UNTIL SZ-1 DO                                   18050000 T  0106:2
               $ SET OMIT = NOT(SHAREDISK)
                    IF HOLDLIST[T].[FF]=[TOG],[CF] THEN                                         18051000 T  0111:2
                    IF (SZ:=SZ-1) # T THEN                                                      18053000 T  0111:2
                    BEGIN                                                                       18054000 T  0113:2
                         MOVE(SZ-T,[HOLDLIST[T+1]],[HOLDLIST[T]]);                              18055000 T  0115:3
                         T:=SZ;                                                                 18056000 T  0116:1
                    END;                                                                        18057000 T  0119:1
                                                                                                18058000 T  0120:0
                                                                                                            18055000
                    HOLDER.[FF]:=Y:=SZ;                                                         18059000 T  0120:2
                    IF SZ#0 THEN                                                                18060000 T  0122:1
                    BEGIN                                                                       18061000 T  0123:0
                         FOR Y←0 STEP 1 UNTIL SZ-1 DO                                           18062000 T  0123:2
                         IF HOLDLIST[Y].[CF]=LOC.[FF] THEN                                      18063000 T  0127:3
                         BEGIN                                                                  18064000 T  0129:3
               $ SET OMIT = NOT(SHAREDISK)
                              M[HOLDLIST[Y].[FF]]←1;                                            18065000 T  0130:1
                              Y:=SZ;                                                            18068000 T  0130:1
                         END;                                                                   18069000 T  0132:2
                                                                                                18070000 T  0133:1
                                                                                                            18064000
                         DISKWAIT(HOLDLIST INX 0,SZ,HOLDER.[CF]);                               18071000 T  0133:3
                    END;                                                                        18072000 T  0136:1
                                                                                                            18061000
               $ SET OMIT = NOT SHAREDISK                                                       18072490 T  0136:1
                    IF SZ=Y THEN                                                                18073000 T  0136:1
                    BEGIN                                                                       18074000 T  0137:0
                         M[LOC+4].[3:1]:=0;                                                     18075000 T  0137:2
                         IF HOLD=2 THEN DISKWAIT(LOC.[CF],-30,LOC.[FF]);                        18075500 T  0140:3
               $ SET OMIT = NOT SHAREDISK                                                       18075990 T  0144:2
                    END;                                                                        18077500 T  0144:2
```

```
            FORGETSPACE(HOLDLIST);                                                  18074000
        END;                                                    18078000 T  0144:2
                                                                18079000 T  0145:2
                                                                                    18047500
    END; % OF FILEHOLDER                                        18080000 T  0145:2
                                                                                    18003000
                                                                            SIZE= 0146 WORDS
```

```
%COMMENT THE DISK FILE HEADER CONTAINS THE FOLLOWING INFORMATION:
%H[0].[0:15]      RECORD LENGTH
%     .[15:15]    BLOCK LENGTH
%     .[30:12]    RECORD/BLOCK
%     .[42:6]     SEGMENTS/BLOCK
%H[1].[6:18]      CREATION DATE FOR LOGGING (WHEN ON DISK)
%     .[25:23]    CREATION TIME FOR LOGGING (WHEN ON DISK)
%     .[1:47]     NUMBER OF LOGICAL RECORDS PER ROW (WHEN IN CORE)
%H[2].[0:48]      =0  FREE FILE
%     .[1:1]      =0  SOLE USER, PUBLIC OR PRIVATE FILE
%     .[1:1]      =1  SECURITY FILE
%     .[6:42]     PRIMARY USER'S CODE
%H[3].[1:1]       =1  NEW FILE HEADER FORMAT
%     .[2:10]     SAVE FACTOR (BINARY)
%     .[12:18]    DATE OF LAST ACCESS (BINARY)
%     .[30:18]    CREATION DATE (BINARY)
%H[4].[1:1]       =1   FILE IS BEING LOADED OR NAME IS BEING CHANGED
%     .[2:1]      =1   FILE IS OPENED BY AN EXCLUSIVE USER
%     .[3:1]      =1   A PROGRAM IS WAITING TO USE THE FILE
%     .[4:2]      SYSTEM NUMBER OF EXCLUSIVE USER
%     .[6:1]      USED BY AUTOPRINT TO MARK A PBD FILE
%     .[7:1]      USED TO MARK PSEUDO DECKS THAT WERE CREATED ON
%     .[8:1]      USED TO MARK SPECIAL COMPILERS
%     .[9:2]      =2  FILE IS DATA
%                 =3  FILE IS PROGRAM
%                 =0  DON'T KNOW IF DATA OR PROGRAM
%     .[11:1]     FILE ACCESSED BIT
%     .[12:4]     SYSTEM FILE TOGGLES
%     .[16:5]     OPEN COUNT 2 FOR SYSTEM 0 (A)
%     .[21:5]     OPEN COUNT 2 FOR SYSTEM 1 (B)
%     .[26:5]     OPEN COUNT 2 FOR SYSTEM 2 (C)
%     .[31:5]     OPEN COUNT 2 FOR SYSTEM 3 (D)
%     .[36:6]     =0 TYPE IS UNKNOWN
%                 =1  BASIC
%                 =2  ALGOL
%                 =3  COBOL
%                 =4  FORTRAN
%                 =5  TSPOL
%                 =6  XALGOL
%                 =7  SEQ
%                 =8  DATA
%                 =9  LOCK
%     .[42:1]     USED TO MARK FILES WHICH CANT BE MOVED
%     .[43:2]     SENSITIVE DATA - ZEROING BITS
%     .[45:1]     COLD START FILE
%     .[46:2]     NOT USED
%H[5].[0:48]      =0  SOLE USER FILE
%     .[1:1]      =1 PRIVATE FILE
%                 =12 IF H[6]=12 THEN INFO FILE ELSE PUBLIC FILE
%H[7]             NUMBER OF LOGICAL RECORDS (EOF POINTER)
%H[8]             NUMBER OF SEGMENTS PER ROW
%H[9].[1:1]       TOGGLE 1 FOR SYSTEM 0 (A)
%     .[2:1]      TOGGLE 1 FOR SYSTEM 1 (B)
%     .[3:1]      TOGGLE 1 FOR SYSTEM 2 (C)
%     .[4:1]      TOGGLE 1 FOR SYSTEM 3 (D)
%     .[5:1]      TOGGLE 2 FOR SYSTEM 0 (A)
%     .[6:1]      TOGGLE 2 FOR SYSTEM 1 (B)
```

```
%     .[7:1]       TOGGLE 2 FOR SYSTEM 2 (C)                                  18136000 T  0000:0
%     .[8:1]       TOGGLE 2 FOR SYSTEM 3 (D)                                  18137000 T  0000:0
%     .[9:5]       OPEN COUNT 1 FOR SYSTEM 0 (A)                              18138000 T  0000:0
%     .[14:5]      OPEN COUNT 1 FOR SYSTEM 1 (B)                              18139000 T  0000:0
%     .[19:5]      OPEN COUNT 1 FOR SYSTEM 2 (C)                              18140000 T  0000:0
%     .[24:5]      OPEN COUNT 1 FOR SYSTEM 3 (D)                              18141000 T  0000:0
%     .[29:14]     NOT USED                                                   18142000 T  0000:0
%     .[43:5]      MAXIMUM NUMBER OF ROWS                                     18143000 T  0000:0
%H[10]-H[29]       DISK ADDRESSES OF ROWS (0 IF NOT ASSIGNED)                 18144000 T  0000:0
%                                                                            18145000 T  0000:0
%                                                                            18146000 T  0000:0
%THE OPEN COUNTS AND TOGGLES ARE USED IN THE FOLLOWING MANNER:               18147000 T  0000:0
%                                                                            18148000 T  0000:0
%    TOGGLE 1     TOGGLE 2     OPEN COUNT 1     OPEN COUNT 2                 18149000 T  0000:0
%      0            0           INPUT ONLY         INPUT                     18150000 T  0000:0
%      0            1 (OUTPUT)  NOT USED           INPUT                     18151000 T  0000:0
%      1            0           SHARED             INPUT                     18152000 T  0000:0
%      1            1           PROTECT            INPUT                     18152100 T  0000:0
%                                                                            18153000 T  0000:0
%END COMMENT;                                                                18154000 T  0000:0
    REAL  PROCEDURE  DIRECTORYSEARCH(A,B,OPTN);%                             18155000 T  0000:0
                                                  START OF REL SEGMENT: DISK ADDRESS = 00510
        VALUE  A,B,OPTN;  REAL  A,B,OPTN;%                                   18156000 T  0000:0
%   OPTN= 0   OPENS FOR SHARED USE                                           18157000 T  0000:0
%   OPTN= 1   OPENS FOR INPUT                                                18158000 T  0000:0
%   OPTN= 2   OPENS FOR OUTPUT                                               18159000 T  0000:0
%   OPTN= 3   OPENS FOR WRITELOCK                                            18160000 T  0000:0
%   OPTN= 4   OPENS FOR EXCLUSIVE USE                                        18161000 T  0000:0
%   OPTN= 5   RETURNS FILE HEADER (UNCHANGED)                                18162000 T  0000:0
%   OPTN= 6   REMOVES FILE FROM DISK UNCONDITIONALLY                         18163000 T  0000:0
%   OPTN= 7   REMOVES FILE FROM DISK AS SOON AS IT IS NOT IN USE             18164000 T  0000:0
%   OPTN= 8   REMOVES FILE HEADER ONLY                                       18165000 T  0000:0
%   OPTN= 9   HEADERUNLOCK--WRITES HEADER POINTED TO BY (F=4).[CF]           18166000 T  0000:0
%             BACK OUT ON (F=4).[FF]. TURNS OFF INTERLOCK & DOES             18167000 T  0000:0
%             FORGETSPACE(F=4).                                              18168000 T  0000:0
%   OPTN=10   CLOSE SHARED                                                   18169000 T  0000:0
%   OPTN=11   CLOSE INPUT                                                    18170000 T  0000:0
%   OPTN=12   CLOSE OUTPUT                                                   18171000 T  0000:0
%   OPTN=13   CLOSE WRITELOCK                                                18172000 T  0000:0
%   OPTN=14   CLOSE EXCLUSIVE                                                18173000 T  0000:0
%   OPTN=15   LOGS THE FILE AND RESETS ITS CREATION DATE AND TIME            18174000 T  0000:0
%   OPTN=16   MAKES THE FILE NOT A SYSTEM FILE                               18175000 T  0000:0
%   OPTN=17   MAKES THE FILE A SYSTEM FILE                                   18176000 T  0000:0
%   OPTN=18   WILL INTERLOCK SYSTEM FILES                                    18177000 T  0000:0
%   OPTN=19   RETURNS FILE HEADER (UNCHANGED AND LOCKED...IT IS UP TO        18178000 T  0000:0
%                          THE CALLING ROUTINE TO CLEAN UP)                  18178100 T  0000:0
%   OPTN=20   CLOSE A FILE GIVEN JUST THE DISK ADDRESS OF ITS HEADER         18179000 T  0000:0
%             A CONTAINS THE DISK ADDRESS                                    18179010 T  0000:0
%             B CONTAINS THE OPTN NUMBER OF THE DESIRED CLOSE                18179020 T  0000:0
%   OPTN=21   OPENS PROTECT                                                  18179100 T  0000:0
%   OPTN=22   CLOSE PROTECT                                                  18179200 T  0000:0
%   OPTN>512  FILECLOSE--ADDRESS OF HEADER IN OPTN.[CF]                      18180000 T  0000:0
%                 CLOSE OPTION=10 IS IN OPTN.[FF]                            18181000 T  0000:0
%   OPTN< 0   RETURNS AN AREA OF USER DISK AND UPDATES CORE COPY             18182000 T  0000:0
%             OF FILE HEADER--ADDRESS OF HEADER IS IN OPTN.[CF]--             18183000 T  0000:0
%             NUMBER OF THE ROW TO BE FILLED IS IN OPTN.[FF]                 18184000 T  0000:0
%             IS IN OPTN.[CF]                                                18185000 T  0000:0
```

```
                    %   A.[1:1]   DIRECTORYSEARCH WILL FORGET THE MEMORY SPACE                    18186000 T  000:0
                    %             OCCUPIED BY THE FILE HEADER                                    18187000 T  000:0
                    %   A.[2:1]   IS DIALED INTO FH[4].[1:1] WHEN OPTN=4                         18188000 T  000:0
                    %   A.[3:1]   IF A CONFLICT OCCURS, AN "IF" WILL BE ENABLED. IF THE          18189000 T  000:0
                    %             OPERATOR ENTERS AN "IF", DIRECTORYSEARCH WILL RETURN A         18190000 T  000:0
                    %             VALUE OF 1,  CURRENTLY, THIS IS USED ONLY BY LIBMAIN.          18191000 T  000:0
                    %   B.[1:1]   DIRECTORYSEARCH WILL RETURN A VALUE OF 1 IF THE                18192000 T  000:0
                    %             FILE IS IN USE                                                 18193000 T  000:0
                    %   B.[2:1]   WILL NOT UPDATE DATE OF LAST ACCESS                            18194000 T  000:0
                    %   B.[3:1]   WILL SET FILE ACCESSED BIT FOR CLOSE                           18195000 T  000:0
                    BEGIN                                                                        18196000 T  000:0
                          REAL OLDONE=-4;                                                        18197000 T  000:0
STACK(F-4) = OLDONE
                          REAL TEMP,I,T,TOG,J,K,N,F,X;                                           18198000 T  000:0
STACK(F+2) = TEMP
STACK(F+3) = I
STACK(F+4) = T
STACK(F+5) = TOG
STACK(F+6) = J
STACK(F+7) = K
STACK(F+10) = N
STACK(F+11) = F
STACK(F+12) = X
                          INTEGER S,I1,I2,I3;                                                    18199000 T  000:0
STACK(F+13) = S
STACK(F+14) = I1
STACK(F+15) = I2
STACK(F+16) = I3
                          REAL UNITNO;                                                           18199100 T  000:0
STACK(F+17) = UNITNO
                          ARRAY FH[*],NB[*];                                                     18200000 T  000:0
STACK(F+20) = FH
STACK(F+21) = NB
                    $ SET OMIT = NOT SHAREDISK                                                   18200490 T  000:0
                      DEFINE DSED=TERMSET(P1MIX)#;                                               18201000 T  000:0
                    $ SET OMIT = SHAREDISK                                                       18201490 T  000:0
                      DEFINE UNLOCKHDR = EXIT#;                                                  18201500 T  000:0
                    $ POP OMIT                                                                   18201510 T  000:0
                      LABEL LL,FXT,CHECK,LWS;                                                    18202000 T  000:0
                      LABEL OPENSHARED,OPENINPUT,OPENOUTPUT,OPENWRITELOCK,                       18203000 T  000:0
                            OPENEXCLUSIVE,L6,L7,L8,EXIT,LWRITE,FOUND,                            18204000 T  000:0
                            THU,CLOSE,LW,BOMB,GETAROW,EX,                                        18205000 T  000:0
                            CLOSESHARED,CLOSEINPUT,CLOSEOUTPUT,CLOSEWRITELOCK,                   18206000 T  000:0
                            CLOSEXCLUSIVE,ZER,UNSYS,SYS,                                         18207000 T  000:0
                            SEE,LOCKSYS,DONTWAIT,NOFILE,COMPLETE,LEAVELKD,UNUSED;                18208000 T  000:0
                    $ SET OMIT = NOT(DISKLOG)                                                    18209000 T  000:0
                      LABEL OPENPROTECT,CLOSEPROTECT;                                            18210300 T  000:0
                      SWITCH Q:=OPENSHARED,OPENINPUT,OPENOUTPUT,OPENWRITELOCK,                   18211000 T  000:0
                            OPENEXCLUSIVE,EXIT,L6,L7,L8,EXIT,                                    18212000 T  000:0
                            CLOSESHARED,CLOSEINPUT,                                              18213000 T  000:0
                            CLOSEOUTPUT,CLOSEWRITELOCK,CLOSEXCLUSIVE                             18214000 T  000:0
                    $ SET OMIT = NOT(DISKLOG)                                                    18215000 T  000:0
                    $ SET OMIT = DISKLOG                                                         18217000 T  000:0
                            ,EXIT                                                                18218000 T  000:0
                    $ POP OMIT                                                                   18218001 T  000:0
                            ,UNSYS,SYS                                                           18219000 T  000:0
                            ,LOCKSYS,LEAVELKD,UNUSED,OPENPROTECT,CLOSEPROTECT                    18220000 T  000:0
```

```
                ;                                                                  18221000 T  0000:0
   %*************************************************                               18222000 T  0000:0
   REAL SUBROUTINE SEARCH;                                                         18223000 T  0000:0
   BEGIN                                                                           18224000 T  0001:0
$ SET OMIT = NOT SHAREDISK                                                         18224490 T  0001:0
        S:=SCRAMBLE(A,B);                                                          18225000 T  0001:0
        DISKWAIT(-N,-60,S);                                                        18226000 T  0008:0
   LL:  FOR X:=0 STEP 3 UNTIL 57 DO                                                18227000 T  0009:3
             IF (NB[X] EQV A.[6:42]) = NOT 0 THEN                                  18227500 T  0011:0
             IF (NB[X+1] EQV B.[6:42]) = NOT 0 THEN GO TO FOUND;                   18228000 T  0013:3
        IF (S:=NB[2].[FF])≠0 THEN                                                  18228500 T  0020:1
        BEGIN DISKWAIT(-N,60,S);                                                   18229000 T  0022:1
             GO TO LL;                                                             18229500 T  0024:1
        END ELSE                                                                   18230000 T  0024:3
                                                                                                 18229000
$ SET OMIT = NOT SHAREDISK                                                         18230490 T  0024:3
        GO TO EXT;                                                                 18231000 T  0024:3
   FOUND: I←(K←NB[X+2].[CF]-DIRECTORYTOP-4).[44:4]×2;                              18232000 T  0024:3
        J ←(K AND NOT 15)+DIRECTORYTOP+19;                                         18233000 T  0029:1
        K ← K+DIRECTORYTOP+4;                                                      18234000 T  0031:3
   EXT; SEARCH ← S;                                                                18235000 T  0033:2
   END;                                                                            18236000 T  0034:0
                                                                                                 18224000
   %*************************************************                               18237000 T  0034:1
   SUBROUTINE HEADER;                                                              18238000 T  0034:1
   BEGIN                                                                           18239000 T  0035:0
        DISKWAIT(-F,30                                                             18240000 T  0035:0
$ SET OMIT = NOT SHAREDISK                                                         18240090 T  0035:3
             ,K);                                                                  18240200 T  0035:3
$ SET OMIT = NOT SHAREDISK                                                         18240490 T  0036:2
        TEMP:=F&K[CTF]&I[8:38:10];                                                 18241000 T  0036:2
   END;                                                                            18242000 T  0038:3
                                                                                                 18239000
   %*************************************************                               18243000 T  0039:0
   SUBROUTINE REMOVER;       % CANT BE CALLED FROM OTHER SUBROUTINES.              18244000 T  0039:0
   BEGIN NB[X]←@14;                                                                18245000 T  0039:0
        DISKWAIT(N,-60,S);                                                         18245500 T  0040:1
$ SET OMIT = NOT SHAREDISK                                                         18245990 T  0041:3
        DISKWAIT(-N,-30,J);                                                        18247500 T  0041:3
        NB[I]←@14; NB[I+1]←NEXTSLOT; NEXTSLOT←K;                                   18248000 T  0043:2
        DISKWAIT(N,-30,J);                                                         18248500 T  0047:1
$ SET OMIT = NOT SHAREDISK                                                         18248990 T  0048:3
   END;                                                                            18250000 T  0048:3
                                                                                                 18245000
   %*************************************************                               18251000 T  0049:0
   SUBROUTINE HOLD;                                                                18252000 T  0049:0
   BEGIN                                                                           18253000 T  0049:0
$ SET OMIT = NOT SHAREDISK                                                         18253490 T  0049:0
        IF B.[1:1] THEN GO DONTWAIT;                                               18254000 T  0049:0
$ POP OMIT OMIT                                                                    18254010 T  0050:2
        FILEHOLD(A,B,TOG,TEMP,1);                                                  18255000 T  0050:2
        IF P THEN % 0 OR 1 IS LEFT ON TOP OF STACK IN FILEHOLD                     18255100 T  0052:3
          BEGIN TEMP:=3; A:=-1; GO EXIT; END % DS-ED IN FILEHOLD                   18255200 T  0052:3
                                                                                                 18255200
             ELSE                                                                  18255300 T  0055:2
        IF P1MIX≠0 THEN                                                            18256000 T  0055:2
        IF REPLY[P1MIX]=VIF THEN                                                   18258000 T  0056:3
        BEGIN                                                                      18259000 T  0058:1
```

```
                FILEHOLD(A,B,TOG,TEMP,2);                                                  18260000 T  005813
    DONTWAIT:                                                                              18260500 T  006110
                TEMP:=1; % IN USE                                                          18261000 T  006110
                GO TO EXIT;                                                                18262000 T  006113
            END;                                                                           18263000 T  006211
                                                                                                       18259000
            IF SEARCH=0 THEN                                                               18264000 T  006211
            BEGIN FILEHOLD(A,B,TOG,TEMP,0);                                                18265000 T  006312
    NOFILE:    TEMP:=0; A:=-1; GO EXIT;                                                    18266000 T  006611
            END;                                                                           18269000 T  006812
                                                                                                       18265000
            HEADER;                                                                        18270000 T  006812
    END; % OF HOLD                                                                         18271000 T  007010
                                                                                                       18253000
    %*************************************************                                     18272000 T  007011
$ SET OMIT = NOT(PACKETS)                                                                  18272199 T  007011
            IF OPTN,[CF] LSS 512 THEN                                                      18272200 T  007011
            BEGIN UNITNO:=OPTN,[9:21]; OPTN:=OPTN INX 0; END;                              18272300 T  007612
                                                                                                       18272300
$ POP OMIT                                                                                 18272301 T  007912
$ SET OMIT = SHAREDISK                                                                     18272990 T  007912
            LOCKDIRECTORY;                                                                 18273000 T  007912
                                                                                                       18273000
                                                                                                       18273000
$ POP OMIT                                                                                 18273010 T  008610
            IF OPTN=20 THEN                                                                18273020 T  008610
             BEGIN OPTN:=B.[CF];                                                           18273030 T  008613
             DISKWAIT(-(F:=SPACE(30)),-30,(K:=A.[CF]));                                    18273040 T  008812
             FH:=[M[F]]&30[8:38:10];                                                       18273050 T  009311
             TEMP := F & K  [CTF];                                          %155-          18273055 C  009512
             GO Q[OPTN];                                                                   18273060 T  009613
             END;                                                                          18273070 T  010911
                                                                                                       18273030
            IF OPTN=9 THEN                                                                 18274000 T  010911
            BEGIN                                                                          18275000 T  011010
                 DISKWAIT(-(N:=SPACE(30)),-30,(K:=OLDONE,[FF]));                           18276000 T  011012
                 FH:=[M[F:=(TEMP:=OLDONE),[CF]]]&30[8:38:10];                              18276500 T  011511
                 A:=NABS(A);                                                               18277000 T  011910
                 FH[4]:=(*P(DUP))&M[N+4][3:3:1];                                           18277500 T  012010
                 GO TO CLOSEXCLUSIVE;                                                      18278000 T  012313
            END;                                                                           18279000 T  012610
                                                                                                       18275000
            NB:=[M[N:=SPACE(60)]]&60[8:38:10];                                             18280000 T  012610
            IF SEARCH=0 THEN                                                               18281000 T  013011
            BEGIN                                                                          18282000 T  013112
                 A:=0;                                                                     18283000 T  013210
                 GO TO EXIT;                                                               18284000 T  013213
            END;                                                                           18285000 T  013311
                                                                                                       18282000
$ SET OMIT = NOT SHAREDISK                                                                 18285099 T  013311
$ SET OMIT = SHAREDISK                                                                     18285999 T  013311
            FH:=[M[F:=TYPEDSPACE(30,DISKHEADERAREAV)]]&30[8:38:10]; % %167-                 18286000 P  013311
$ POP OMIT                                                                                 18286001 T  013712
            HEADER;                                                                        18287000 T  013712
            IF OPTN<0 THEN GO GETAROW;                                                     18288000 T  013910
            IF OPTN≥512 THEN GO TO Q[OPTN,[FF]+10];                                        18289000 T  014011
$ SET OMIT = SHAREDISK                                                                     18289999 T  015510
```

```
        IF OPTN LSS 5 OR OPTN=17 OR OPTN=7 THEN                                  18290000 T  0155:0
$ POP OMIT                                                                       18290001 T  0157:3
$ SET OMIT = NOT SHAREDISK                                                       18290099 T  0157:3
   CHECK:                                                                        18291000 T  0157:3
        BEGIN                                                                    18292000 T  0158:1
             IF FH[4].[44:1] AND OPTN LSS 5 THEN                                 18292100 T  0158:1
             BEGIN % TRYING TO OPEN WHILE FILE IS BEING BLANKED                  18292200 T  0160:1
$ SET OMIT = NOT SHAREDISK                                                       18292300 T  0160:3
             GO NOFILE;                                                          18292600 T  0160:3
             END;                                                                18292700 T  0161:1
                                                                                                 18292200
$ SET OMIT = SHAREDISK                                                           18292999 T  0161:1
             IF NOT OPTN OR OPTN=7 THEN                                          18293000 T  0161:1
$ POP OMIT                                                                       18293001 T  0162:3
$ SET OMIT = NOT SHAREDISK                                                       18293099 T  0162:3
             IF FH[4].[12:4]≠0 THEN                                              18293200 T  0162:3
             BEGIN   %   IT IS A SYSTEM FILE                                     18294000 T  0164:3
                  TEMP:=2; % SYSTEM FILE                                         18295000 T  0165:1
$ SET OMIT = NOT SHAREDISK                                                       18295490 T  0166:0
                  GO TO EXIT;                                                    18296000 T  0166:0
             END;                                                                18297000 T  0166:2
                                                                                                 18294000
   SEE:                                                                          18298000 T  0166:2
        IF (FH[4].[2:2] AND (NOT TOG OR 2))≠0 THEN                               18299000 T  0166:2
             BEGIN                                                               18300000 T  0169:1
                  HOLD;                                                          18301000 T  0169:3
                  GO CHECK;                                                      18302000 T  0171:0
             END;                                                                18303000 T  0171:2
                                                                                                 18300000
        END;                                                                     18305000 T  0171:2
                                                                                                 18292000
        GO TO Q[OPTN];                                                           18306000 T  0171:2
                                                                                                 18292000
   OPENSHARED:                                                                   18307000 T  0184:0
        IF FH[9].[5:4]=0 THEN                                                    18308000 T  0184:0
        IF FH[9].[1:4]≠0 OR FH[9].[9:20]=0 THEN                                  18309000 T  0185:2
        BEGIN                                                                    18310000 T  0189:1
$ SET OMIT = NOT(SHAREDISK)                                                      18310999 T  0189:3
$ SET OMIT = SHAREDISK                                                           18314099 T  0189:3
             FH[9].[9:5]:=P(DUP).[9:5]+1;                                        18314100 T  0189:3
             FH[9].[1:1]:=1;                                                     18314200 T  0193:1
$ POP OMIT                                                                       18314201 T  0195:3
             GO TO LWRITE;                                                       18315000 T  0195:3
        END;                                                                     18316000 T  0196:1
                                                                                                 18310000
        HOLD;                                                                    18317000 T  0196:1
        GO TO OPENSHARED;                                                        18318000 T  0197:0
   OPENINPUT:                                                                    18319000 T  0197:2
$ SET OMIT = NOT(SHAREDISK)                                                      18319999 T  0197:2
$ SET OMIT = SHAREDISK                                                           18321099 T  0197:2
        FH[4].[16:5]:=P(DUP).[16:5]+1;                                           18321100 T  0197:2
$ POP OMIT                                                                       18321101 T  0201:0
        GO TO LWRITE;                                                            18322000 T  0201:0
   OPENOUTPUT:                                                                   18323000 T  0201:2
        IF FH[9].[5:24]=0 THEN                                                   18324000 T  0201:2
        BEGIN                                                                    18325000 T  0203:0
$ SET OMIT = NOT(SHAREDISK)                                                      18325999 T  0203:2
$ SET OMIT = SHAREDISK                                                           18327099 T  0203:2
```

```
                FH[9].[5:1]:=1;                                                  18327100 T  0203:2
$ POP OMIT                                                                       18327101 T  0206:0
                GO TO LWRITE;                                                    18328000 T  0206:0
          END;                                                                   18329000 T  0206:2
                                                                                                 18325000
          HOLD;                                                                  18330000 T  0206:2
          GO TO OPENOUTPUT;                                                      18331000 T  0208:0
     OPENWRITELOCK:                                                              18332000 T  0208:2
          IF FH[9].[1:8]=0 THEN                                                  18333000 T  0208:2
          BEGIN                                                                  18334000 T  0210:0
$ SET OMIT = NOT(SHAREDISK)                                                      18334999 T  0210:2
$ SET OMIT = SHAREDISK                                                           18336099 T  0210:2
                FH[9].[9:5]:=P(DUP).[9:5]+1;                                     18336100 T  0210:2
$ POP OMIT                                                                       18336101 T  0214:0
                GO TO LWRITE;                                                    18337000 T  0214:0
          END;                                                                   18338000 T  0214:2
                                                                                                 18334000
          HOLD;                                                                  18339000 T  0214:2
          GO TO OPENWRITELOCK;                                                   18340000 T  0216:0
     OPENEXCLUSIVE:                                                              18341000 T  0216:2
          IF FH[9].[5:24]=0 THEN                                                 18342000 T  0216:2
          IF FH[4].[16:20]=0 THEN                                                18343000 T  0218:0
          BEGIN                                                                  18344000 T  0220:0
COMPLETE:      FH[4]:=(P(DUP,LOD))&SYSNO[4:46:2]&1[2:47:1]&A[1:2:1];             18345000 T  0220:2
                GO TO LWRITE;                                                    18346000 T  0225:0
          END;                                                                   18347000 T  0225:2
                                                                                                 18344000
          HOLD;                                                                  18348000 T  0225:2
          GO TO OPENEXCLUSIVE;                                                   18349000 T  0227:0
     OPENPROTECT:                                                                18349100 T  0227:2
$ SET OMIT = NOT SHAREDISK                                                       18349149 T  0227:2
$ SET OMIT = SHAREDISK                                                           18349799 T  0227:2
          GO TO OPENEXCLUSIVE;                                                   18349800 T  0227:2
$ POP OMIT                                                                       18349801 T  0228:0
     CLOSESHARED:                                                                18350000 T  0228:0
$ SET OMIT = NOT(SHAREDISK)                                                      18350999 T  0228:0
$ SET OMIT = SHAREDISK                                                           18357099 T  0228:0
          IF (I:=FH[9].[9:5]-1)=0 THEN                                           18357100 T  0228:0
          FH[9].[1:1]:=0;                                                        18357200 T  0230:2
          FH[9].[9:5]:=I;                                                        18357300 T  0233:2
$ POP OMIT                                                                       18357301 T  0236:0
          GO TO CLOSE;                                                           18358000 T  0236:0
     CLOSEINPUT:                                                                 18359000 T  0236:2
$ SET OMIT = NOT(SHAREDISK)                                                      18359999 T  0236:2
$ SET OMIT = SHAREDISK                                                           18361099 T  0236:2
          FH[4].[16:5]:=P(DUP).[16:5]-1;                                         18361100 T  0236:2
$ POP OMIT                                                                       18361101 T  0240:0
          FH[4].[6:1]:=0;                                                        18361200 T  0240:0
          GO TO LW;                                                              18362000 T  0242:2
     CLOSEOUTPUT:                                                                18363000 T  0243:0
$ SET OMIT = NOT(SHAREDISK)                                                      18363999 T  0243:0
$ SET OMIT = SHAREDISK                                                           18365099 T  0243:0
          FH[9].[5:1]:=0;                                                        18365100 T  0243:0
$ POP OMIT                                                                       18365101 T  0245:2
          GO TO CLOSE;                                                           18366000 T  0245:2
     CLOSEWRITELOCK:                                                             18367000 T  0246:0
$ SET OMIT = NOT(SHAREDISK)                                                      18367999 T  0246:0
```

```
$ SET OMIT = SHAREDISK
        FH[9],[9:5]:=P(DUP),[9:5]-1;                                    18369099 T  0246:0
$ POP OMIT                                                              18369100 T  0246:0
        GO TO LW;                                                       18369101 T  0249:2
   CLOSEXCLUSIVE:                                                       18370000 T  0249:2
        FH[4],[1:2]←0;                                                  18371000 T  0250:0
   GO TO CLOSE;                                                         18372000 T  0250:0
   CLOSEPROTECT:                                                        18373000 T  0252:2
$ SET OMIT = NOT SHAREDISK                                              18374000 T  0253:0
$ SET OMIT = SHAREDISK                                                  18374001 T  0253:0
        GO TO CLOSEXCLUSIVE;                                            18374599 T  0253:0
$ POP OMIT                                                              18374600 T  0253:0
$ SET OMIT = NOT SHAREDISK                                              18374601 T  0253:2
   SYS:                                                                 18374999 T  0253:2
        IF FH[9],[1:8]=0 THEN                                           18388000 T  0253:2
        BEGIN                                                           18389000 T  0253:2
$ SET OMIT = NOT(SHAREDISK)                                             18390000 T  0255:0
$ SET OMIT = SHAREDISK                                                  18390999 T  0255:2
            FH[4],[12:1]:=1;                                            18392099 T  0255:2
$ POP OMIT                                                              18392100 T  0255:2
            GO TO LWRITE;                                               18392101 T  0258:0
        END;                                                            18393000 T  0258:0
                                                                        18394000 T  0258:2
                                                                                      18390000
        HOLD;                                                           18395000 T  0258:2
        GO TO SYS;                                                      18396000 T  0260:0
   UNSYS:                                                               18397000 T  0260:2
$ SET OMIT = NOT(SHAREDISK)                                             18397999 T  0260:2
$ SET OMIT = SHAREDISK                                                  18399099 T  0260:2
        FH[4],[12:1]:=0;                                                18399100 T  0260:2
$ POP OMIT                                                              18399101 T  0263:0
        GO TO LW;                                                       18400000 T  0263:0
   LOCKSYS:                                                             18401000 T  0263:2
        OPTN:=4;                                                        18402000 T  0263:2
        GO SEE;                                                         18403000 T  0264:1
$ SET OMIT = NOT(SHAREDISK)                                             18403999 T  0264:3
$ SET OMIT = NOT(DISKLOG)                                               18411000 T  0264:3
   GETAROW:                                                             18421000 T  0264:3
        IF FH[12:=OPTN,[FF]]=0 THEN                                     18422000 T  0264:3
        BEGIN                                                           18423000 T  0266:3
$ SET OMIT = NOT(DISKLOG)                                               18424000 T  0267:1
            IF (FH[12]:=GETUSERDISK(FH[8]&3[1:46:2]))=0 THEN            18425100 T  0267:1
            BEGIN                                                       18425150 T  0271:0
$ SET OMIT = SHAREDISK                                                  18425175 T  0271:2
                UNLOCKDIRECTORY;                                        18425200 T  0271:2
                                                                                      18425200
                                                                                      18425200
$ SET OMIT = NOT SHAREDISK                                              18425225 T  0275:0
                I1:=GETUSERDISK(-FH[8]);                                18425300 T  0275:0
$ SET OMIT = SHAREDISK                                                  18425390 T  0277:0
                LOCKDIRECTORY;                                          18425400 T  0277:0
                                                                                      18425400
                                                                                      18425400
$ POP OMIT                                                              18425410 T  0283:2
                IF SEARCH=0 THEN                                        18425500 T  0283:2
                BEGIN FORGETUSERDISK(I1,FH[8]);                         18425600 T  0285:2
                    TEMP:=0; A:="1;                                     18425700 T  0287:1
                    GO TO EXIT;                                         18425800 T  0289:0
```

```
                    END;                                                                    18425900 T  0291:0
                                                                                                        18425600
                    HEADER;                                                                 18426000 T  0291:0
                    FH[I2]:=I1;                                                             18426100 T  0292:0
               END;                                                                         18426200 T  0293:1
                                                                                                        18425150
          END;                                                                              18427000 T  0293:1
                                                                                                        18423000
          FOR I2:=FH[9].[43:5]+9 STEP -1 UNTIL 10 DO                                        18428000 T  0293:1
              M[OPTN INX I2]:=FH[I2];                                                       18429000 T  0298:1
          GO TO LW;                                                                         18430000 T  0301:0
     CLOSE:                                                                                 18431000 T  0301:2
          IF B.[3:1] THEN FH[4].[11:1] ← 1;                                                 18431050 T  0301:2
          IF OPTN GTR 511 THEN                                                              18431100 T  0305:1
          BEGIN                                                                             18431200 T  0306:0
               IF (FH[0] EQV M[OPTN])≠NOT 0 THEN                                            18431300 T  0306:2
               IF (I1:=(((I1:=((((I2:=FH[7]+1) DIV (I3:=FH[0]).[30:12])                     18431400 T  0309:0
                    ×I3.[42:6])×30)+(I2 MOD I3.[30:12])                                     18431500 T  0312:2
                    ×(IF (I2:=I3.[1:14])=0 THEN 30 ELSE I2)) DIV 30)                        18431600 T  0314:2
                    DIV (I3:=M[OPTN]).[42:6])×I3.[30:12]                                    18431700 T  0320:0
                    +((((I1 DIV 30) MOD I3.[42:6])×30                                       18431800 T  0322:2
                    +I1 MOD 30+I3.[1:14]-1) DIV I3.[1:14])-1)                               18431900 T  0325:1
                    =M[OPTN+7] THEN GO TO LW;                                               18432000 T  0329:3
               FH[0]:=M[OPTN];                                                              18432100 T  0332:3
          FH[4]:=(*P(DUP)) OR (M[OPTN+4] AND 16);                                           18432150 T  0334:3
               FH[7]:=M[OPTN+7];                                                            18432200 T  0338:2
          END;                                                                              18432300 T  0341:0
                                                                                                        18431200
          GO TO LW;                                                                         18432400 T  0341:0
     L7:%                                                                                   18432500 T  0341:2
          IF NOT (FH[4] AND @1400777777770000)≠NOT 0 OR                                     18432600 T  0341:2
               FH[9].[1:28]≠0 THEN                                                          18433000 T  0343:2
          BEGIN                                                                             18434000 T  0345:1
               HOLD;                                                                        18435000 T  0345:3
               GO TO L7;                                                                    18436000 T  0347:0
          END;                                                                              18437000 T  0349:0
                                                                                                        18434000
     L6:%                                                                                   18438000 T  0349:0
          IF FH[4].[43:2] NEQ 0 THEN % TEST FILE SENSITIVE                                  18438100 T  0349:0
            BEGIN                                                                           18438110 T  0350:2
              STREAM(A,B,T:=T:=TYPEDSPACE(10,CONTROLCARDAREAV)+2);% %167-                   18438120 P  0351:0
                BEGIN                                                                       18438130 T  0354:3
                  DS:=10LIT"CC REMOVE "; SI:=LOC A; SI:=SI+1; DS:=7CHR;                     18438140 T  0354:3
                  DS:=LIT"/"; SI:=LOC B; SI:=SI+1; DS:=7CHR;                                18438150 T  0357:0
                  DS:=6LIT";END.←";                                                         18438155 T  0358:1
                END;                                                                        18438160 T  0359:1
                                                                                                        18438130
              FH[4].[43:2]:=1;                                                              18438170 T  0359:2
              INDEPENDENTRUNNER(P(..CONTROLCARD),T&(IF UNITNO NEQ 0                         18438180 T  0362:0
                        THEN UNITNO ELSE 31)[2:42:6]&1[8:47:1],192);                        18438190 T  0363:0
              IF UNITNO≥32 AND UNITNO≤63 THEN PSEUDOCOPY←PSEUDOCOPY+1;                      18438195 C  0367:1
              M[T-4].[9:6]:=0;                                                              18438200 T  0370:3
     $ SET OMIT = NOT(SHAREDISK)                                                            18438202 T  0374:0
              GO COMPLETE;                                                                  18438210 T  0374:0
            END;                                                                            18438220 T  0374:2
                                                                                                        18438110
     $ SET OMIT = PACKETS                                                                   18439000 T  0374:2
```

```
          LBMESS(ABS(A),ABS(B),7,0,0,UNITNO,LIBMSG);                                  18439125 T  0374:2
 $ SET OMIT = NOT(DISKLOG)                                                            18440000 T  0377:3
          PBCOUNT:=PBCOUNT-((((A.[6:42] EQV "PBD    ")=NOT 0) OR                     18442000 T  0377:3
                    ((A.[6:42] EQV "PUD    ")=NOT 0)) AND B.[CF]=1);                  18443000 T  0380:2
   L8:    REMOVER;                                                                    18444000 T  0385:2
          IF OPTN#8 THEN                                                              18444500 T  0387:0
          FOR I ← 1 STEP 1 UNTIL FH[9] DO%                                            18445000 T  0387:3
          IF  FH[9+I]#0  THEN  FORGETUSERDISK(FH[I+9],FH[8]);%                        18446000 T  0392:1
          GO TO LW;                                                                   18447000 T  0399:0
    LWRITE:                                                                           18453500 T  0399:2
          IF NOT B.[2:1] THEN                                                         18454000 T  0399:2
          STREAM(A←[DATE],B←[FH[3]],C←0);                                             18455000 T  0400:2
          BEGIN SI←A;DI←LOC C;DS←8 OCT;SI←LOC C;SI←SI+5;                              18456000 T  0402:2
               DI←B;DI←DI+2;DS←3 CHR;                                                 18457000 T  0403:3
          END;                                                                        18458000 T  0404:2
                                                                                                  18456000
    LW:                                                                               18459000 T  0404:3
          IF FH[4].[3:1] OR TOG THEN FILEHOLD(A,B,TOG,TEMP,0);                        18460000 T  0404:3
          IF OPTN<6 OR OPTN>8 THEN                                                    18460500 T  0409:0
    LWS:  DISKWAIT(F,-30,K);                                                          18461000 T  0410:3
EX:       FH[9]:=(*P(DUP)) AND 31;                                                    18462000 T  0412:3
    EXIT:%                                                                            18463000 T  0414:3
          IF A.[1:1] OR TEMP<64 AND TEMP>0 THEN FORGETSPACE(F);                       18465000 T  0414:3
 $ SET OMIT = SHAREDISK                                                               18465990 T  0419:0
          UNLOCKDIRECTORY;                                                            18466000 T  0419:0
                                                                                                  18466000
                                                                                                  18466000
 $ POP OMIT                                                                           18466010 T  0422:2
LEAVELKn:                                                                             18466100 T  0422:2
UNUSED:                                                                               18466101 T  0422:2
          IF N NEQ 0 THEN FORGETSPACE(N);                                             18466200 T  0423:0
          DIRECTORYSEARCH←TEMP;                                                       18467000 T  0425:0
END; % OF DIRECTORYSEARCH                                                             18468000 T  0425:3
                                                                                                  18196000
                                                                                      SIZE= 0428 WORDS
```

```
                PROCEDURE PICKTHELOCK; FORWARD;                                  18468100 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00525
PRT(641) = PICKTHELOCK
                PROCEDURE EVENTANDINTERRUPT; FORWARD;                            18468200 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00525
PRT(642) = EVENTANDINTERRUPT
                PROCEDURE COMMUNICATE1;                                          18500000 T  0000:0
                                                                 START OF REL SEGMENT; DISK ADDRESS = 00525
                BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8;                        18500100 T  0000:0
STACK(F-4) = R4
STACK(F-5) = R5
STACK(F-6) = R6
STACK(F-7) = R7
STACK(F-10) = R8
                    INTEGER I4=-4,I5=-5,I6=-6;                                   18500200 T  0000:0
STACK(F-4) = I4
STACK(F-5) = I5
STACK(F-6) = I6
                    ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                            18500300 T  0000:0
STACK(F-4) = A4
STACK(F-5) = A5
STACK(F-6) = A6
                    ARRAY A7=-7[*];                                              18500400 T  0000:0
STACK(F-7) = A7
                    NAME N4=-4,N5=-5,N6=-6;                                      18500500 T  0000:0
STACK(F-4) = N4
STACK(F-5) = N5
STACK(F-6) = N6
                    LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,  18500600 T  0000:0
                          C17,C18,C19,C20,C21,C22,C23,C24,C25,C26;               18500700 T  0000:0
                    LABEL C27,C28,C29,C30,C31,C32;                               18500800 T  0000:0
                    LABEL C33,C34,C35,C36,C37,C38,C39,C45,C47,C48,C49,           18500900 T  0000:0
                          C30A,C30B,C49A,                                        18501000 T  0000:0
                          INIT,AC0,AC1,AC2,AC3,AC4,AC5,CHANGENAME;               18501100 T  0000:0
                $ SET OMIT = NOT SHAREDISK                                       18501200 T  0000:0
                    SWITCH AC:=AC0,AC1,AC2,AC3,AC4,AC5;                          18501700 T  0000:0
                    SWITCH C:=C0,INIT,INIT,INIT,C4,INIT,INIT,INIT,INIT,INIT,INIT,  18501800 T  0000:0
                             INIT,INIT,INIT,INIT,C15,C16,INIT,INIT,INIT,INIT,    18501900 T  0000:0
                             INIT,INIT,INIT,INIT,INIT,INIT,INIT,INIT,INIT,C30,   18502000 T  0000:0
                             C31,C32,C33,INIT,INIT,INIT,INIT,INIT,INIT,INIT,     18502100 T  0000:0
                             INIT,INIT,INIT,INIT,C45,INIT,INIT,INIT,C49;         18502200 T  0000:0
                    REAL RCW=+0,I,J,T;                                           18502300 T  0000:0
STACK(F+0) = RCW
STACK(F+1) = I
STACK(F+2) = J
STACK(F+3) = T
                    ARRAY A[*],FIB=A[*],FPB[*],H[*];                             18502400 T  0000:0
STACK(F+4) = A
STACK(F+4) = FIB
STACK(F+5) = FPB
STACK(F+6) = H
                    BOOLEAN SUBROUTINE DELAYOK;                                  18503000 T  0000:0
                %   CHECKS FOR TIMEOUT, DS, OR CONDITION SATISFIED FOR COMMUNICATE 31.  18503100 T  0001:0
                    BEGIN                                                        18503200 T  0001:0
                        DELAYOK := CLOCK+P(RTR)>I4 OR TERMSET(P1MIX) OR          18503300 T  0001:0
                          (I := NOT(M[A6] AND R5)≠NOT(0));                       18503400 T  0004:0
                    END;                                                         18503500 T  0007:3
```

```
                                                                                                                    18503200
%
      GO TO C[PRT[P1MIX,9]];                                                                                        18503600 T  0008:0
INIT: GO TO INITIATE;                                                                                               18504000 T  0008:0
%     COBOL INVALID EOJ                                                                                             18505000 T  0036:1
CO:   TERMINATE(P1MIX); TERMINALMESSAGE(28);                                                                        18510000 T  0036:3
%     GENERALIZED ZIP                                                                                               18510100 T  0036:3
C4:   IF (I←A4.[8:10])≠0 THEN BEGIN                                                                                 18520000 T  0038:1
 $ SET OMIT = PACKETS                                                                                               18520100 T  0038:1
 $ SET OMIT = NOT(PACKETS)                                                                                          18520200 T  0040:3
      M[(T:=TYPEDSPACE(I+5,CONTROLCARDAREAV)+2)-4].[AREAMIXF]:=0;% %167-                                             18520500 T  0040:3
 $ POP OMIT                                                                                                         18520600 P  0040:3
      IF NOT A4.[2:1] THEN MAKEPRESENT(NFLAG(NOT 3 INX [RCW]));                                                     18520700 T  0047:0
      IF (J←USERCODE[P1MIX])=NOT(-0) THEN J←0;                                                                      18520800 T  0047:0
      STREAM(C←J,A4,I1←I.[36:6],I,Q←0,T);                                                                           18520900 T  0050:2
      BEGIN SI:=A4; SI:=SI-1;                                                                                       18521000 T  0053:3
      L:    SI:=SI+1; IF SC=" " THEN GO TO L; Q:=SI; DI:=Q;                                                         18521100 T  0056:2
            IF SC=@14 THEN DS:=LIT" " ELSE DS:=2LIT"  "; DI:=T;                                                     18521200 T  0057:0
            DS:=8LIT"CC USER="; SI:=LOC C; SI:=SI+1; DS:=7 CHR;                                                     18521300 T  0058:2
            DS:= LIT";" ; SI:=A4;                                                                                   18521400 T  0060:2
            I1(DS:=32WDS; DS:=32WDS);  DS:= I WDS;                                                                  18521500 T  0062:2
 $ SET OMIT = NOT(PACKETS)                                                                                          18521600 T  0063:1
            DS:=8 LIT"←";                                                                                           18521700 T  0065:0
 $ POP OMIT                                                                                                         18521800 T  0065:0
                  TALLY:=12;I:=TALLY;                                                                               18521900 T  0066:1
                  DI:=Q;SI:=LOC I;SI:=SI+7;DS:=CHR;                                                                 18522000 T  0066:1
      END STREAM;                                                                                                   18522100 T  0066:3
                                                                                                                    18521100
      J←IF USERCODE[P1MIX]=MCP  THEN 31 ELSE 26;                                                                    18522300 T  0067:3
 $ SET OMIT = NOT(PACKETS)                                                                                          18522400 T  0068:0
        IF PSEUDOMIX[P1MIX] NEQ 0 THEN NYLONZIPPER[P1MIX].[2:1]:=0;                                                 18522500 T  0071:3
 $ POP OMIT                                                                                                         18522600 T  0071:3
        INDEPENDENTRUNNER(P(.CONTROLCARD),T&P1MIX[18:42:6]                                                          18522700 T  0075:3
 $ SET OMIT = NOT(DATACOM AND RJE )                                                                                 18522800 T  0075:3
                                          &J[3:43:5],192);                                                          18523100 T  0076:3
 $ SET OMIT = NOT(PACKETS)                                                                                          18523200 T  0076:3
        IF PSEUDOMIX[P1MIX] NEQ 0 THEN                                                                              18523300 T  0079:0
          SLEEP([NYLONZIPPER[P1MIX]],@1000000000000000);                                                            18523400 T  0079:0
 $ POP OMIT                                                                                                         18523500 T  0080:0
        END ELSE                                                                                                    18523600 T  0082:1
                                                                                                                    18520100
        BEGIN FIB←N4[NOT 2];                                                                                        18523700 T  0082:1
              FPB←PRT[P1MIX,3];                                                                                     18523800 T  0085:3
              I←IF FIB[4].[12:1] THEN FIB[4].[13:11]                                                                18523900 T  0087:1
                                 ELSE (FIB[4].[13:11]-1)×ETRLNG;                                                    18524000 T  0089:0
              T←FPB[I+3].[43:5];                                                                                    18524100 T  0092:3
              IF T=10 OR T=12 OR T=13 OR T=26 THEN                                                                  18524200 T  0094:3
              BEGIN                                                                                                 18524300 T  0098:2
                    IF FIB[5].[42:1] THEN GO TO CHANGENAME;                                                         18524400 T  0099:0
                    H←FIB[14];                                                                                      18524500 T  0100:3
 $ SET OMIT = DATACOM AND RJE                                                                                       18524600 T  0101:3
                    H[6]:=0;                                                                                        18524700 T  0101:3
 $ POP OMIT                                                                                                         18524800 T  0103:0
                    H[5]:=USERCODE[P1MIX];                                                                          18524900 T  0103:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                                                                 18525000 T  0104:2
                    H[6]←(*P(DUP))&3[2:42:6];                                                                       18525300 T  0104:2
 $ RESET OMIT                                                                                                       18525400 T  0107:0
```

```
                    IF H[4] THEN                                                    18525500 T  0107:0
                    BEGIN FILECLOSE(N4,[33:15]);                                    18525600 T  0107:2
  CHANGENAME:             IF (T←DIRECTORYSEARCH(FPB[I],FPB[I+1],4))                 18525700 T  0109:1
                             LSS 64                                                 18525750 T  0111:1
                             THEN GO TO INITIATE;                                   18525800 T  0112:0
                        H←[M[T]]&30[8:38:10];                                       18525900 T  0113:2
$ SET OMIT = NOT(SHAREDISK)
                        H[5]:=USERCODE[P1MIX];                                      18526000 T  0115:3
                                                                                    18526300 T  0115:3
$ SET OMIT = NOT(PACKETS)
                    H[6]←(*P(DUP))&3[2:42:6];                                       18526400 T  0117:1
                                                                                    18526500 T  0117:1
$ POP OMIT
                                                                                    18526600 T  0119:3
                        ENTERCONTROLDECK(H);                                        18526700 T  0119:3
                        P(DIRECTORYSEARCH(=FPB[I],FPB[I+1],8),DEL);                 18526800 T  0120:3
                        J←H[2]; % SAVED LASTCDNUM                                   18527000 T  0123:2
                        FORGETSPACE(H);                                             18527100 T  0124:2
                    END ELSE                                                        18527200 T  0125:2
                                                                                                   18525600
                    BEGIN FILECLOSE((N4,[33:15])&6[18:33:15]);                      18527300 T  0125:2
                        ENTERCONTROLDECK(H);                                        18527400 T  0127:3
                        J←H[2]; % SAVED LASTCDNUM                                   18527500 T  0128:3
                        FOR T←10 STEP 1 UNTIL 29 DO H[T]←0;                         18527600 T  0129:3
                        FILECLOSE(N4,[33:15]);                                      18527700 T  0134:2
                    END;                                                            18527800 T  0135:3
                                                                                                   18527300
                    IF RUNUMBER LEQ 0 THEN                                          18527900 T  0135:3
                    BEGIN                                                           18528000 T  0136:2
                    STREAM(A←CJAR[P1MIX,0]], B←H←USERCODE[P1MIX],                   18528100 T  0137:0
                         F←H≠MCP AND H≠0, P1MIX, J, T←T←SPACE(10));                 18528200 T  0139:1
                    BEGIN SI←A; DS←LIT"#";                                          18528300 T  0145:1
                        2(SI←SI+1; DS←7 CHR; DS←LIT"/"); DI←DI-1;                   18528400 T  0146:0
                        F(SI←LOC B; SI←SI+1; DI←DI+1; DS←7 CHR);                    18528500 T  0147:3
                        SI←LOC P1MIX; DS←LIT"="; A←DI;                              18528600 T  0149:2
                        DS←2 DEC; DS←14 LIT" ZIPPED DECK #";                        18528700 T  0150:2
                        SI←LOC J; DS←4 DEC; DS←LIT"←";                              18528800 T  0152:3
                        DI←DI-5; DS←3 FILL; DI←A; DS←FILL;                          18528900 T  0153:3
                    END;                                                            18529000 T  0154:3
                                                                                                   18528300
                    SPOUT(T);                                                       18529100 T  0155:0
                    END;                                                            18529200 T  0156:1
                                                                                                   18528000
                END;                                                                18529300 T  0156:1
                                                                                                   18524300
              END;                                                                  18529400 T  0156:1
                                                                                                   18523700
            GO TO INITIATE;                                                         18529500 T  0156:1
        %   DISPLAY (COBOL)                                                         18530000 T  0156:3
        C15: DISPLAY(A4 INX 1); GO TO INITIATE;                                     18530100 T  0156:3
        %   COBOL ACCEPT                                                            18540000 T  0158:3
        C16: DISPLAY(A4 INX 2);                                          %747-      18540100 P  0158:3
            IF AUTODS THEN TERMINATE(P1MIX&61[CTF]) ELSE                 %747-      18540120 C  0160:1
            BEGIN REPLY[P1MIX]:=-VWY&VAX[36:42:6];                       %747-      18540140 C  0162:3
            COMPLEXSLEEP((TERMSET(P1MIX) OR REPLY[P1MIX] GTR 0));                   18540200 T  0165:3
18032000  ACCIDENTAL ENTRY AT 0
             END;                                                        %747-      18540220 C  0172:3
                                                                                                   18540140
            IF TERMSET(P1MIX) THEN GO INITIATE;                                     18540300 T  0172:3
            IF NOT WHYSLEEP(VWY&VAX[36:42:6]) THEN GO TO C16;                       18540400 T  0175:1
```

```
      T←REPLY[P1MIX].[18:15]; REPLY[P1MIX]←0;                                  18540500 T  0177:2
      STREAM(T,S←A4 [NX 2);                                                    18540600 T  0180:1
            BEGIN SI←T;                                                        18540700 T  0182:0
            L:    IF SC≠"X" THEN BEGIN SI←SI+1; GO TO L END;                   18540800 T  0182:1
                                                                                          18540800
                  SI←SI+1; 2(DS←40 CHR);                                       18540900 T  0183:1
            END;                                                               18541000 T  0184:1
                                                                                          18540700
      FORGETSPACE(T=1); GO TO INITIATE;                                        18541100 T  0184:2
%   DIRECTORYSEARCH AND UN-FILL FILE ID FOR NORMAL STATE PROGRAMS              18550000 T  0186:1
C30:    COMMENT SEARCHES DISK DIRECTORY AND RETURNS DATA IN ARRAY.             18550100 T  0186:1
              [0] IS USER-TYPE OR NOT-PRESENT FLAG                             18550200 T  0187:0
              [1] IS MULTI-FILE ID                                             18550300 T  0187:0
              [2] IS FILE ID                                                   18550400 T  0187:0
              IF NOT PRESENT, [3] => [5] ARE -1                                18550500 T  0187:0
              IF INVALID USER, [3] => [5] ARE 0                                18550600 T  0187:0
              IF PRIMARY, SECONDARY, OR TERTIARY USER:                         18550700 T  0187:0
              [3] IS RECORD LENGTH                                             18550800 T  0187:0
              [4] IS BLOCK LENGTH                                              18550900 T  0187:0
              [5] IS END OF FILE POINTER                                       18551000 T  0187:0
              [6] IS OPEN COUNT                                                18551100 T  0187:0
              IF ARRAY SIZE IS GREATER THAN 9:                                 18551200 T  0187:0
                 [7] = FILETYPE (FROM HEADER)                                  18551300 T  0187:0
                 [8] = HEADER[3] (CREATION/ACCESS DATE,SAVE FACTOR)            18551400 T  0187:0
                 [9] = HEADER[1] ( LOGGING DATES)                              18551500 T  0187:0
              IF ARRAY SIZE IS GREATER THAN 10:                                18551600 T  0187:0
                 [10]= SYSTEM NUMBER (SHAREDISK)                               18551700 T  0187:0
              NOT-PRESENT    FLAG IS  -1                                       18551800 T  0187:0
              INVALID   USER FLAG IS   0                                       18551900 T  0187:0
              PRIMARY   USER FLAG IS   7 (LM,INPUT, AND OUTPUT BITS)           18552000 T  0187:0
              SECONDARY USER FLAG IS   3 (INPUT AND OUTPUT BITS)               18552100 T  0187:0
              TERTIARY  USER FLAG IS   2 (INPUT BIT ONLY)                      18552200 T  0187:0
      ;                                                                        18552300 T  0187:0
      IF A4.[8:10]<7 THEN BEGIN TERMINATE(P1MIX);%                             18552400 T  0187:0
                                TERMINALMESSAGE(7);  END;%                     18552500 T  0189:3
                                                                                          18552400
      IF NOT A4.[2:1] THEN MAKEPRESENT(NFLAG(NOT 3 INX [RCW]));%               18552600 T  0190:2
      P([M[A4 INX NOT 1]],DUP,DUP,LOD,XCH,CCX,,J,STD,IOR);%                    18552700 T  0194:0
      FIB ← N5[NOT 2];  FPB ← PRT[P1MIX,3];                                    18552800 T  0197:3
      I ← IF FIB[4].[12:1] THEN FIB[4].[13:11]%                                18552900 T  0201:0
            ELSE (FIB[4].[13:11]-1)×ETRLNG;                                    18553000 T  0202:3
      A4[1] ← FPB[I];  A4[2] ← FPB[I+1];                                       18553100 T  0206:2
      IF P(FPB[I+3].[43:5],DUP,DUP)=10          %RANDOM                        18553200 T  0210:0
         OR (P(XCH) OR 1)=13 OR P(XCH)=26 THEN %SERIAL,UPDATE,PROTECT          18553300 T  0212:1
 IF ((T:=DIRECTORYSEARCH(A4[1],A4[2],5) ) NEQ 0                        %207-     18553400 P  0215:0
   AND M[T+4].[12:4] EQL 0 ) THEN                                      %207-     18553410 C  0218:0
     BEGIN IF (A4[0] ← SECURITYCHECK(A4[1],A4[2],USERCODE[P1MIX],T))≠0          18553500 T  0221:0
           AND M[T+4].[12:4]=0                                                 18553600 T  0224:3
           THEN BEGIN A4[3] ← M[T].[1:14];%                                    18553700 T  0227:1
                      A4[4] ← M[T].[15:5];  A4[5] ← M[T+7];%                   18553800 T  0231:0
$ SET OMIT = SHAREDISK                                                         18553900 T  0236:0
                      A4[6]:=M[T+4].[16:5]+M[T+9].[9:5];                       18554000 T  0236:0
$ POP OMIT                                                                     18554100 T  0241:1
$ SET OMIT = NOT(SHAREDISK)                                                    18554200 T  0241:1
                      IF A4.[8:10] GTR 9 THEN                                  18554600 T  0241:1
                      BEGIN A4[7]:=M[T+4].[36:6];  A4[8]:=M[T+3];              18554700 T  0242:3
                            A4[9]:=M[T+1];                                     18554800 T  0248:3
```

```
                    END;                                                                    18554900 T  0251:1
                                                                                                    18554700
                  IF A4.[8:10] GTR 10 THEN A4[10]:=SYSNO;                                   18555000 T  0251:1
                 END ELSE A4[3]:=A4[4]:=A4[5]:=A4[6]:=0;                                    18555100 T  0254:2
                                                                                                    18553700
                 FORGETSPACE(T);                                                            18555200 T  0259:1
                 GO TO C30B                                                                 18555300 T  0260:0
            END ELSE GO C30A ELSE                                                           18555400 T  0260:2
                                                                                                    18553500
            BEGIN                                                                           18555500 T  0260:2
                 T:=-1;                                                                     18555600 T  0261:0
                 IF (T:=FINDINPUT(A4[1],A4[2],FPB[I+2],[1:17],                              18555700 T  0262:0
                       FPB[I+2].[18:30],FPB[I+3].[1:5],[A4[3]] INX 0,                       18555800 T  0264:3
                       T,0,0,0))=NABS(1) THEN GO TO C30A ELSE                               18555900 T  0268:3
                 IF T GEQ 0 THEN                                                            18556000 T  0271:1
                 BEGIN                                                                      18556100 T  0272:2
                      A4[0]:=4; A4[3]:=(I:=RDCTABLE[T]).[14:10];                            18556200 T  0273:0
                      A4[4]:=I.[24:17]; A4[5]:=I.[41:7];                                    18556300 T  0276:3
                      A4[6]:=TINU[T].[30:18]; IF T<16 THEN                                  18556400 T  0280:1
                      A4[6]:=(*P(DUP))&PRNTABLE[T][12:30:18]; GO C30B;                      18556500 T  0283:0
                 END ELSE                                                                   18556600 T  0286:3
                                                                                                    18556100
                 BEGIN                                                                      18556700 T  0286:3
                      A4[0]:=5; A4[3].[1:5]:=ABS(T); GO C30B                                18556800 T  0287:1
                 END;                                                                       18556900 T  0291:3
                                                                                                    18556700
            END;                                                                            18557000 T  0291:3
                                                                                                    18555500
C30A:  A4[0]:=A4[3]:=A4[4]:=A4[5]:=A4[6]:=-1;                                               18557100 T  0291:3
       C30B:                                                                                18557200 T  0297:1
            IF NOT J.[2:1] THEN P([M[J]],PRL);%                                             18557300 T  0297:1
            GO TO INITIATE;%                                                                18557400 T  0300:0
       %    ALGOL "DELAY" FUNCTION -- WAIT WITH TIMEOUT                                     18558990 T  0300:2
       C31: IF A6.[CF]<512 THEN     % CAUGHT SOMEONE BEING SNEAKY                          18559000 T  0300:2
            BEGIN TERMINATE(P1MIX);                                                         18559100 T  0302:2
                  TERMINALMESSAGE(17);                                                      18559200 T  0303:3
            END;                                                                            18559300 T  0304:2
                                                                                                    18559100
            I4:=60*I4+CLOCK+P(RTR);                                                         18559400 T  0304:2
            IF NOT DELAYOK THEN COMPLEXSLEEP(DELAYOK);                                      18559500 T  0306:3
18540200    ACCIDENTAL ENTRY AT DELAYOK
            I6:=1;                                                                          18559600 T  0314:0
            GO TO INITIATE;                                                                 18559700 T  0314:3
       C32::                                                                                18560000 T  0315:1
        $ SET OMIT = NOT(DATACOM )                                                          18560100 T  0315:1
            GO TO INITIATE;                                                                 18565600 T  0315:1
       C33:: STREAM(R4,A+(R4#0),J+JARROW[P1MIX],P1MIX,%                                     18570000 T  0316:2
                              T+T+SPACE(10));%                                              18570100 T  0319:0
            BEGIN DS+10 LIT " PAUSE # 0";%                                                  18570200 T  0321:2
                  A(DI+DI-1;  SI+LOC R4;  SI+SI+2;  DS+6 CHR);                              18570300 T  0323:0
                  DS+5 LIT " FOR";  SI+J;  SI+SI+1;  DS+7 CHR;%                             18570400 T  0324:3
                  DS+LIT "/";  SI+SI+1;  DS+7 CHR;  DS+LIT "=";%                            18570500 T  0326:2
                  SI+LOC P1MIX;  DS+2 DEC;  DS+LIT "+";  DI+DI+3;  DS+FILL;%                18570600 T  0328:0
            END;%                                                                           18570700 T  0329:2
                                                                                                    18570200
            SPOUT(T);%                                                                      18570800 T  0329:3
            IF NOTERMSET(P1MIX) THEN PRTROW[P1MIX].[PSF]:=2;                                18570900 T  0331:0
```

```
                GO TO INITIATE;% DON'T KEEP COMMUNICATE AROUND NEEDLESSLY                18571200 T  0335:2
          C45:: IF R4 THEN  % COBOL68 EXIT PROGRAM/ EXIT PROGRAM RETURN HERE            18580000 T  0336:0
                     BEGIN     IF A5.PBIT THEN     % IF THERE IS A TASK ARRAY          18580100 T  0336:1
                                  IF A5[6]=1 THEN  % TYPE = CALLED                      18580200 T  0337:3
                                       BEGIN     A5[7] ← 1;                           18580300 T  0339:1
                                                 COMPLEXSLEEP(A5[7],[46:1]            18580400 P  0341:0
                                                    OR (TERMSET(P1MIX)));             18580410 C  0341:0
18559500    ACCIDENTAL ENTRY AT 1
                                                 A5 ← 1;                              18580500 T  0348:3
                                            END ELSE A5 ← 0                           18580600 T  0349:2
                                                                                                  18580300
                                                ELSE A5 ← 0;                          18580700 T  0350:0
                                       GO TO INITIATE;                                18580800 T  0352:0
                                  END;                                                18580900 T  0352:2
                                                                                                  18580100
                              % DETACH TASK ARRAY: DS OR ES JOB RUNNING OR SCHEDULED   18581000 T  0352:2
                               IF N5[6]=2 THEN GO TO INITIATE;                        18581100 T  0352:2
                               IF N5[3]=1 THEN SHEETDIDDLER(0,20,N5[4]);              18581200 T  0355:0
                               IF N5[3]=2 THEN                                        18581300 T  0359:0
                                    BEGIN     TERMINATE(N5[4]&61[CTF]); HALT;       18581400 T  0360:2
                                              NOPROCESSTOG ← NOPROCESSTOG-1;         18581500 T  0363:2
                                    END;                                              18581600 T  0364:3
                                                                                                  18581400
                               GO TO INITIATE;                                        18581700 T  0364:3
                          C49::                                                       18590000 T  0365:1
                           $ SET OMIT = NOT SHAREDISK                                 18590100 T  0365:1
                                GO INITIATE;                                          18593300 T  0365:1
                          END OF COMMUNICATE1;                                        18599000 T  0366:2
                                                                                                  18500100
                                                                                    SIZE= 0367 WORDS
```

```
                    PROCEDURE COMMUNICATE0;                                                    18700000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00538
                    BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8;                                  18700100 T  0000:0
STACK(F-4) = R4
STACK(F-5) = R5
STACK(F-6) = R6
STACK(F-7) = R7
STACK(F-10) = R8
                          INTEGER I4=-4,I5=-5,I6=-6;                                           18700200 T  0000:0
STACK(F-4) = I4
STACK(F-5) = I5
STACK(F-6) = I6
                          ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                                    18700300 T  0000:0
STACK(F-4) = A4
STACK(F-5) = A5
STACK(F-6) = A6
                          ARRAY A7=-7[*];                                                      18700400 T  0000:0
STACK(F-7) = A7
                          NAME N4=-4,N5=-5,N6=-6;                                              18700500 T  0000:0
STACK(F-4) = N4
STACK(F-5) = N5
STACK(F-6) = N6
                          LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,     18700600 T  0000:0
                                C17,C18,C19,C20,C21,C22,C23,C24,C25,C26;                       18700700 T  0000:0
                          LABEL C27,C28,C29,C30,C31,C32;                                       18700800 T  0000:0
                          LABEL C33,C34,C35,C36,C37,C38,C39,C45,C47,C48,C49,                   18700900 T  0000:0
                                C21A,C3A,INIT,US,D,TD,PR,IOT,TMR,IT,AD,WD;                     18701000 T  0000:0
                          LABEL PE,TE,PA;                                          %145-       18701010 C  0000:0
                          DEFINE CN=DIFFCOM#;                                                  18701100 T  0000:0
                          SWITCH S:=PA,PE,TE,IT,US,D ,TD,PR,IOT,TMR,AD,WD;         %145-       18701200 P  0000:0
                          SWITCH C:=INIT,C1,INIT,C3,INIT,INIT,C6,C7,C8,INIT,INIT,              18701300 T  0000:0
                                    INIT,C12,INIT,INIT,INIT,INIT,C17,INIT,INIT,C20,            18701400 T  0000:0
                                    C21,C22,INIT,INIT,C25,C26,INIT,INIT,C29,INIT,              18701500 T  0000:0
                                    INIT,INIT,INIT,INIT,INIT,INIT,INIT,C38,C39,INIT,           18701600 T  0000:0
                                    INIT,INIT,INIT,INIT,INIT,INIT,C47,C48,INIT;                18701700 T  0000:0
                          REAL I,J,T;                                                          18701800 T  0000:0
STACK(F+1) = I
STACK(F+2) = J
STACK(F+3) = T
                          ARRAY AIT[*]; REAL AITL=AIT; ARRAY A=AIT[*];                         18701900 T  0000:0
STACK(F+4) = AIT
STACK(F+4) = AITL
STACK(F+4) = A
                          NAME ADDR;                                                           18702000 T  0000:0
STACK(F+5) = ADDR
                          GO TO C[PRT[P1MIX,9]];                                               18702200 T  0000:0
                    INIT: GO TO INITIATE;                                                      18702300 T  0028:0
                    %     TIME INTRINSIC                                                       18710000 T  0028:2
                    C1:   IF (I4:=I4) GEQ (-5) AND I4 LEQ 6 THEN               %145-       18710100 P  0028:2
                          BEGIN GO TO S[I4+5];                                 %145-       18710200 P  0031:0
                          PA:                                                  %145-       18710240 C  0039:0
                     $ SET OMIT = NOT(PACKETS)                                 %145-       18710242 C  0039:0
                               IF (I:=PSEUDOMIX[P1MIX]) GEQ 32 THEN            %145-       18710244 C  0039:0
                                  I4:=PACKETACT[I-32];                         %145-       18710246 C  0040:2
                     $ POP OMIT                                                %145-       18710248 C  0043:0
                               GO TO INITIATE;                                 %145-       18710249 C  0043:0
                          PF:                                                  %145-       18710250 C  0043:2
```

```
$ SET OMIT = NOT(PACKETS)
          IF (I:=PSEUDOMIX[P1MIX]) GEQ 32 THEN
             BEGIN
             I4:=PACKETERR[I-32];
             PACKETERR[I-32]:=TRUE;
             END;
$ POP OMIT
          GO TO INITIATE;
       IF;
$ SET OMIT = NOT(PACKETS)
          IF (I:=PSEUDOMIX[P1MIX]) GEQ 32 THEN
             I4:=PACKETERR[I-32];
$ POP OMIT
          GO TO INITIATE;
       IT:  I4←JAR[P1MIX,9].[5:1];
            JAR[P1MIX,9]←(*P(DUP)) & 2[4:46:2];
            GO INITIATE;
       US:  R4:=USERCODE[P1MIX]; GO TO INITIATE;
       D:    I4←DATE; GO TO INITIATE;
       TD:   I4←XCLOCK+P(RTR); GO TO INITIATE;
       PR:   I4←JAR[P1MIX,3]+PROCTIME[P1MIX]+CLOCK+P(RTR);
             GO TO INITIATE;
       IOT:  I4←IOTIME[P1MIX]+JAR[P1MIX,4];
             WHILE I4<0 DO I4←I4+CLOCK+P(RTR);
             GO TO INITIATE;
       TMR:  I4←P(RTR);  GO TO INITIATE;
       AD:   I4←ACTDATE; GO TO INITIATE;
       WD:   I4←WEEKDAY; GO TO INITIATE;
       END;

       IF I4 = (-6) THEN I4←P1MIX;
       GO TO INITIATE;
%      RETURN SPECIFIC ARRAY
C3:    ARTN(N4[0],1);          % REMOVE 1 DIM ARRAY
C3A:;  T←[AITL],[CF];          % REMOVE FROM AIT
       IF NOT(AIT←PRT[P1MIX,6]).[2:1] THEN MAKEPRESENT(T);
          J ← AIT[0]; T ← N4.[CF];
       FOR I←1 STEP 1 UNTIL J-1 DO
             IF AIT[I].[18:15]=T THEN
                   BEGIN MOVE(J-I,[AIT[I+1]],[AIT[I]]); J←0 END;
          IF J=0 OR AIT[J].[FF]=T THEN AIT[0] ← *P(DUP)-1;
       N4[0]←0;
       GO TO INITIATE;
%      WHEN
C6:    I4←60×I4+P(RTR)+CLOCK;
       WHILE NOTERMSET(P1MIX) AND CLOCK+P(RTR) LSS I4 DO
             SLEEP([CLOCK],NOT CLOCK);
       GO TO INITIATE;
%      FILL
C7:    IF NOT A5.[2:1] THEN MAKEPRESENT(NFLAG(NOT 0 INX [I4]));
       I←M[A5 INX NOT 0]; J←M[A5 INX NOT 1];
       P([M[A5 INX NOT 1]],IOR);
       IF (NT2←(NT1←*(I4 INX PRT[P1MIX,4])).[18:15])>NT3←A5.[8:10] THEN
             NT2←NT3;
       I4←(IF JAR[P1MIX,10]≠0 THEN JAR[P1MIX,(NT1←NT1.[CF])
```

```
%145-   18710252 C  0043:2
%145-   18710254 C  0043:2
%145-   18710256 C  0045:0
%145-   18710258 C  0045:2
%145-   18710260 C  0047:2
%145-   18710262 C  0050:2
                           18710256
%145-   18710264 C  0050:2
%145-   18710266 C  0050:2
%145-   18710268 C  0051:0
%145-   18710270 C  0051:0
%145-   18710272 C  0051:0
%145-   18710274 C  0052:2
%145-   18710276 C  0055:0
%145-   18710278 C  0055:0
        18710300 T  0055:2
        18710400 T  0057:2
        18710500 T  0060:2
        18710600 T  0061:0
        18710700 T  0062:2
        18710800 T  0063:3
        18710900 T  0065:2
        18711000 T  0068:3
        18711100 T  0069:1
        18711200 T  0071:2
        18711300 T  0075:0
        18711400 T  0075:2
        18711500 T  0076:3
%753-   18711600 P  0078:0
        18711700 T  0079:1
                           18710200
%753-   18711790 C  0079:1
        18711800 T  0081:2
        18720000 T  0082:0
        18720100 T  0082:0
        18720200 T  0083:0
        18720300 T  0084:1
        18720400 T  0087:3
        18720500 T  0090:0
        18720600 T  0094:1
        18720700 T  0095:3
                           18720700
        18720800 T  0100:2
        18720900 T  0105:2
        18721000 T  0106:1
        18730000 T  0106:3
        18730100 T  0106:3
        18730200 T  0109:0
        18730300 T  0112:2
        18730400 T  0114:3
        18740000 T  0115:1
        18740100 T  0115:1
        18740200 T  0118:3
        18740300 T  0123:3
        18740400 T  0125:3
        18740500 T  0131:0
        18740600 T  0132:1
```

```
      DIV (NT3←JAR[P1MIX,8])+10]+NT1 MOD NT3                                  18740700 T  0134:3
      ELSE DALOC[P1MIX,NT1,[33:6]+P(DUP)-1]+NT1,[39:9]);                      18740800 T  0138:3
      DISKWAIT(-A5,[CF],NT2,14);                                              18740900 T  0144:0
      M[A5 INX NOT 0]←*P(,I);                                                 18741000 T  0146:1
      IF NOT (*P(,J)),[2:1] THEN P([M[A5 INX NOT 1]],PRL);                    18741100 T  0149:0
      GO TO INITIATE;                                                         18741200 T  0153:0
%     PLAIN ZIP                                                               18750000 T  0153:2
C8:   ZIPPER(R5,R4,0);                                                        18750100 T  0153:2
      GO TO INITIATE;                                                         18750200 T  0154:3
%     BREAKOUT                                                                18760000 T  0155:1
C12:                                                                          18760100 T  0155:1
 $ SET OMIT = NOT(BREAKOUT)                                                   18760200 T  0155:1
      GO TO INITIATE;                                                         18760500 T  0155:1
%     COBOL I/O ERROR                                                         18770000 T  0155:3
C17:  A5←*A5; A←PRT[P1MIX,3]; I←"I/O ERR";                                    18770100 T  0155:3
      IF A5[5],[1:1] THEN                                                     18770200 T  0159:1
         BEGIN I:= "INVALID";J:="   USER"; R6:=1 END ELSE                     18770300 T  0160:1
                                                                                      18770300
      STREAM(R4,N←[J]); BEGIN SI←LOC R4; DI←DI+1; DS←7 DEC;                   18770400 T  0163:0
                              DI←DI-7; DS←5 FILL;                             18770500 T  0168:3
                        END;                                                  18770600 T  0169:1
                                                                                      18770400
      FILEMESS(I&R6[1:47:1],J,A[T←A5[4],[13:11]],A[T+1],                      18770700 T  0169:2
              IF R4←(R4=16 OR R4=17 OR R4=82) THEN R8 ELSE 0,                 18770800 T  0169:2
               IF R4 THEN R7 ELSE 0,0);                                       18770900 T  0169:2
      GO TO INITIATE;                                                         18771000 T  0181:1
%     TAPE SWAP FOR TAPE SORT                                                 18780000 T  0181:3
C20:  SLEEP([N4[3]],IOMASK); SLEEP([N4[4]],IOMASK);                           18780100 T  0181:3
      FOR I←3 STEP 1 UNTIL 4 DO                                               18780200 T  0185:3
      BEGIN N5[I],[33:15]←N4[I];                                              18780300 T  0187:0
            M[N4[I] INX NOT 1]←(*P(DUP))&N5[3][14:3:4]&[N5[3]][33:33:15]       18780400 T  0190:0
      END;                                                                    18780500 T  0195:1
                                                                                      18780300
      A←N4[0]; A[5],[39:4]←2; A[16]←0; A[18]←NABS(*P(DUP));                   18780600 T  0198:1
      NT4←A[10],[3:15]; A[10],[3:15]←0;                                       18780700 T  0204:2
      A←N5[0]; A[5]←0; A[16]←NFLAG(N5[3]); A[18]←ABS(*P(DUP));                18780800 T  0208:2
      A[10],[3:15]←NT4;                                                       18780900 T  0214:2
      GO TO INITIATE;                                                         18781000 T  0217:0
%     SORT STORAGE ASSIGNMENT                                                 18790000 T  0217:2
C21:  A←[M[GETSPACE(R6←R5,2,1)+2]]&R5[8:38:10];                               18790100 T  0217:2
      A[0]←(R5 INX A)&R6[8:38:10];                                            18790200 T  0221:3
      N4[0]←A;                                                                18790300 T  0224:3
      IF NOT CONQUER(0,R5-1,R6,1 INX A,J) THEN                                18790400 T  0225:3
      BEGIN FORGETSPACE(A);                                                   18790500 T  0229:0
C21A: STREAM(P1MIX,T←R5×R6,A←I←SPACE(7));                                     18790600 T  0230:2
      BEGIN DS←LIT "#"; SI←LOC P1MIX;                                         18790700 T  0234:1
            DS←2 DEC; DS← 13 LIT " NO SORT MEM:";                             18790800 T  0235:0
            DS←5 DEC; DS←9 LIT " WDS RQD←";                                   18790900 T  0237:1
      END;                                                                    18791000 T  0239:0
                                                                                      18790700
 $ SET OMIT = PACKETS                                          %713-          18791099 C  0239:1
 $ SET OMIT = NOT PACKETS                                      %713-          18791609 C  0239:1
      SPOUTER(I,0,0); % JOB MESSAGE PAGE ONLY                  %713-          18791610 C  0239:1
      STREAM(P1MIX, A←I←SPACE(6)); % SIMULATE OPERATORS REPLY   %713-          18791620 C  0240:2
      BEGIN DS←20 LIT "←OPERATOR KEYED IN: ";                  %713-          18791630 C  0243:2
            SI←LOC P1MIX; DS←2 DEC;                            %713-          18791640 C  0246:1
            DS←26 LIT " OU DK'... TRY DISK SORT←←";            %713-          18791650 C  0246:3
```

```
                DI←DI-28; DS←2 FILL;                                    %713-     18791655 C  0250:1
      END; % OF STREAM                                                  %713-     18791660 C  0250:3
                                                                                            18791630
      SPOUTER(I,0,0); % MESSAGE PAGE ONLY                               %713-     18791670 C  0251:0
      J←1; % ASSUME "OU DK" IS OPERATORS RESPONSE                       %713-     18791680 C  0252:1
 $ POP OMIT                                                             %713-     18791681 C  0253:0
      GO TO C21;                                                                   18791700 T  0253:0
      END;                                                                         18791800 T  0253:2
                                                                                            18790500
      GO TO INITIATE;                                                              18791900 T  0253:2
%     SORT STORAGE RETURN                                                          18800000 T  0254:0
C22:: I←N4[0] INX 1;                                                               18800100 T  0254:0
      DO FORGETSPACE(M[I]) UNTIL (I←M[I].[18:15])=0;                               18800200 T  0255:1
      FORGETSPACE(N4[0]); N4[0]←0;                                                 18800300 T  0259:3
      GO TO INITIATE;                                                              18800400 T  0261:1
%     RETURN OLD COPY OF OWN ARRAY                                                 18810000 T  0261:3
C25:: ARTN(A5,R4);                                                                 18810100 T  0261:3
      M[A5.[FF]]←A←PRT[P1MIX,17]&P(.A5,LOD)[18:18:15];                             18810200 T  0263:1
     IF A.[2:1] THEN M[A.[CF]-1].[CF]←A5.[FF];                                     18810300 T  0267:2
      GO TO INITIATE;                                                              18810400 T  0273:1
%     INVALID ARGUMENTS TO ALGOL INTRINSICS                              %WF       18820000 T  0273:3
C26:: IF (I ← R4)≥0 THEN                                                           18820100 T  0273:3
      STREAM(A ←R4, I←I←SPACE(10));                                                18820200 T  0275:1
      BEGIN DS←LIT "-"; %                                               %740-     18820300 P  0278:3
            CI←CI←A;                                                     %WF      18820700 T  0279:1
            GO LOG; GO ROOT; GO LOG; GO EXP; GO SIN;                     %WF      18820800 T  0279:3
            DS←3 LIT "COS"; GO EXIT;                                     %WF      18820900 T  0281:0
      LOG:  DS←2 LIT "LN"; GO EXIT;                                      %WF      18821000 T  0282:0
      ROOT: DS←4 LIT "SQRT"; GO EXIT;                                    %WF      18821100 T  0282:3
      EXP:  DS←3 LIT "EXP"; GO EXIT;                                     %WF      18821200 T  0283:3
      SIN:  DS←3 LIT "SIN";                                              %WF      18821300 T  0284:3
      EXIT: DS←8 LIT " ARGMNT "; SI←LOC A; SI←SI+7; %                   %740-     18821400 P  0285:2
            IF SC≥@3 THEN DS←5 LIT "> 158" ELSE                         %740-     18821410 C  0287:1
            IF SC<@2 THEN DS←5 LIT "NEGTV" ELSE DS←4 LIT "ZERO";        %740-     18821420 C  0289:0
            DS←2 LIT " ←"; %                                            %740-     18821430 C  0291:2
      END;                                                                         18821500 T  0292:0
                                                                                            18820300
         IF I = (-7) THEN          % COBOL INVALID INDEX                          18821600 T  0292:1
           BEGIN                                                                   18821700 T  0293:1
           R4 ← R5; R5 ← R6;                                                       18821800 T  0293:3
           ERRORFIXER(4);          % INVALID INDEX CHECK                          18821900 T  0295:1
           END;                                                                    18822000 T  0296:0
                                                                                            18821700
      TERMINATE(P1MIX); TERMINALMESSAGE(-I);                            %WF      18822100 T  0296:0
C29:: COMMENT THIS COMMUNICATE PROVIDES FOR DS-ING AN OBJECT PROGRAM              18830000 T  0297:3
           AND/OR SPOUTING A MESSAGE ABOUT A PROGRAM.                            18830100 T  0298:0
           R4 IS USED TO SPECIFY THE  MESSAGE REQUIRED.                          18830200 T  0298:0
           R5 SET TO TRUE SPECIFIES P1MIX IS TO BE DS-ED.                        18830300 T  0298:0
           T IS THE ADDRESS OF THE MESSAGE(WHICH ENDS WITH A "←").               18830400 T  0298:0
           REMAINING VARIABLES MAY BE USED AS DESIRED;                           18830500 T  0298:0
   T ← SPACE(12);                                                                18830600 T  0298:0
   IF R4 ≤ 2 THEN                                                                18830700 T  0300:1
        BEGIN;               % 29-1                                            18830800 T  0301:0
        STREAM(J:T);                                                           18830900 T  0301:2
             BEGIN           % 29-2                                            18831000 T  0302:3
             DS ← 9 LIT "-DFC ERR:";                                           18831100 T  0302:3
             J ← DI;                                                           18831200 T  0304:1
```

```
      END;              % 29-2                                                    18831300 T  0304:2
                                                                                                 18831000
J ← P;
IF R4=1 THEN                                                                     18831400 T  0304:3
                                                                                 18831500 T  0305:1
      BEGIN;            % 29-3                                                    18831600 T  0306:0
      STREAM(T1←(R6<0),R6←ABS(R6),J);                                            18831700 T  0306:2
            BEGIN       % 29-4                                                    18831800 T  0308:2
            DS←17 LIT "ARRAY DIMENSION= ";T1(DS← 1 LIT "-");                     18831900 T  0308:2
            SI ← LOC R6;                                                         18832000 T  0312:1
            DS ← 8 DEC;  J  ←DI;                                                 18832100 T  0312:2
            DI ← DI-8;                                                           18832200 T  0313:0
            DS ← 7 FILL; DI ← J;                                                 18832300 T  0313:1
            DS ← 2 LIT " ←";                                                     18832400 T  0313:3
            END;        % 29-4                                                    18832500 T  0314:1
                                                                                                 18831800
      END               % 29-3                                                    18832600 T  0314:2
                                                                                                 18831600
ELSE                                                                             18832700 T  0314:2
      BEGIN;            % 29-5                                                    18832800 T  0314:2
      STREAM(R6,J);                                                              18832900 T  0315:0
            BEGIN       % 29-6                                                    18833000 T  0316:0
            DS ←15 LIT "NO. DISK ROWS= ";                                        18833100 T  0316:0
            SI ← LOC R6;                                                         18833200 T  0318:1
            DS ← 8 DEC;    J ← DI;                                               18833300 T  0318:2
            DI ← DI-8;                                                           18833400 T  0319:0
            DS ← 7 FILL;  DI ← J;                                                18833500 T  0319:1
            DS ← 2 LIT " ←";                                                     18833600 T  0319:3
            END;        % 29-6                                                    18833700 T  0320:1
                                                                                                 18833000
      END;              % 29-5                                                    18833800 T  0320:2
                                                                                                 18832800
      END;              % 29-1                                                    18833900 T  0320:2
                                                                                                 18830800
      IF R4=3 THEN                                                               18834000 T  0320:2
            BEGIN                                                                18834100 T  0321:1
            ;STREAM(T);                                                          18834200 T  0321:3
                  BEGIN                                                          18834300 T  0322:2
                  DS ← 18 LIT "-EXP ARGMNT >158:←"; %              %740-         18834400 P  0322:2
                  END;                                                           18834500 T  0325:0
                                                                                                 18834300
            END;                                                                 18834600 T  0325:1
                                                                                                 18834100
      IF R4 = 4 THEN STREAM(T); BEGIN                                            18834700 T  0325:1
            DS:=37 LIT"ILLEGAL PERFORM - RETURN OR RELEASE:←";                   18834800 T  0327:1
      END;;                                                                      18834900 T  0332:1
                                                                                                 18834700
      IF R5 THEN                                                                 18835000 T  0332:2
      BEGIN             % 29-7                                                   18835100 T  0332:3
            TERMINATE(P1MIX);                                                    18835200 T  0333:1
            TERMINALMESSAGE("T);                                                 18835300 T  0334:0
      END               % 29-7                                                   18835400 T  0335:0
                                                                                                 18835100
   ELSE                                                                          18835500 T  0335:0
      SPOUT(T);                                                                  18835600 T  0335:0
   GO TO INITIATE;                                                               18835700 T  0336:3
C38:; % RETURN STORAGE AND AUXILIARY MEMORY FOR CODE OR DATA SEGMENT             18840000 T  0337:1
     IF A4.[1:1] THEN % CODE SEGMENT                                             18840100 T  0338:0
```

```
                    BEGIN A ← PRT[P1MIX,*]; T ← NFLAG(A4 & (I←0)[5:5:1]);                    18840200 T  0339:0
                          DO IF T.[5:1] THEN I ← T.[FF]   ELSE                               18840300 T  0343:1
                             IF T.[6:1] THEN I ← T.[7:11] ELSE                               18840400 T  0345:3
                                             T ← NFLAG(A[T.[7:11]])                          18840500 T  0348:3
                          UNTIL I≠0;                                                         18840600 T  0350:0
                          ADDR ← I INX A[4];                                                 18840700 T  0352:1
                               IF ADDR[0].[3:1] THEN                                         18840800 T  0353:3
                                          COMPLEXSLEEP((NOT ADDR[0].[3:1]));                 18840900 T  0354:2
18580410            ACCIDENTAL ENTRY AT 1
                               ADDR[0].[3:2] ← 2;                                            18841000 T  0361:0
                               COMMENT TURN OFF AUXILIARY MEMORY FLAG, AND TURN              18841100 T  0362:3
                                          ON THE "DO NOT TOUCH" FLAG FOR                     18841200 T  0362:3
                                          RE-ENTRANT PRESENCE-BIT PROTECTION;                18841300 T  0362:3
                               IF NOT STOREDY THEN SLEEP([TOGLE], STOREMASK);                18841400 T  0362:3
                               LOCKTOG(STOREMASK);                                           18841500 T  0365:3
                                                                                                          18841500
                               IF (I ← (T ← ADDR[0]).[FF])>1023 THEN % PRESENT               18841600 T  0369:1
                               BEGIN J ← M[I-1]; P(OLAY(I-2), DEL) END                       18841700 T  0371:3
                                                                                                          18841700
                     $ SET OMIT = NOT(AUXMEM)                                               18841800 T  0375:3
                     $ SET OMIT = AUXMEM                                                    18842200 T  0375:3
                                ;                                                           18842300 T  0375:3
                     $ POP OMIT                                                             18842400 T  0375:3
                     $ SET OMIT = NOT(AUXMEM)                                               18842500 T  0375:3
                               ADDR[0].[3:1]←0;                                             18843400 T  0375:3
                               COMMENT 3:1 =0, NOT BEING MASSAGED BY PRESENCE BIT           18843500 T  0377:2
                                       4:2 =2, ASSIGN AUXILIARY MEMORY NEXT OVERLAY;        18843600 T  0377:2
                               UNLOCKTOG(STOREMASK);                                        18843700 T  0377:2
                                                                                                          18843700
                          GO TO INITIATE                                                    18843800 T  0381:0
                    END; % OF CODE SEGMENTS                                                 18843900 T  0381:2
                                                                                                          18840200
                    IF NOT STOREDY THEN SLEEP([TOGLE], STOREMASK);                          18844000 T  0381:2
                    LOCKTOG(STOREMASK);                                                     18844100 T  0384:2
                                                                                                          18844100
                    IF (T ← NFLAG(M[J ← A4.[FF]])).[2:1] THEN                               18844200 T  0388:0
                    BEGIN M[J].[3:3]←7; %MARK AS "READ-ONLY", ALREADY WRITTEN               18844300 T  0391:2
                          M[T INX NOT 0] ← (*P(DUP)) & ((I←P(DUP).[FF]) OR 1)[CTF];         18844400 T  0394:3
                          AITL ← M[T INX NOT 1].[2:1];                                      18844500 T  0399:2
                          P(OLAY(T.[CF]-2));                                                18844600 T  0402:1
     $ SET OMIT = NOT(DEBUGGING)                                                            18844700 T  0404:0
                          P(DEL)                                                            18845100 T  0404:0
                    END ELSE AITL←((I←T.[CF])=1);                                           18845200 T  0404:1
                                                                                                          18844300
                    IF I>511 THEN DISKRTN(I, T.[8:10]);                                     18845300 T  0407:0
                    M[J] ← FLAG(T&0[2:42:6]&AITL[CTC]);                                     18845400 T  0409:3
                    UNLOCKTOG(STOREMASK);                                                   18845500 T  0413:0
                                                                                                          18845500
                    GO TO INITIATE;                                                         18845600 T  0416:2
C39:: % BASIC ARRAY RETURN                                                                  18850000 T  0417:0
                    ARTN(N4[0],R5);          % RETURN R5 DIM ARRAY                       18850100 T  0417:0
                    GO TO C3A;               % TO REMOVE FROM AIT                        18850200 T  0418:0
C47::       PRT[P1MIX,8] ← FLAG(R8);%DONE ONLY AT END OF INTERRUPTER INTRIN                 18860000 T  0418:2
                    P(8 INX PRT[P1MIX,TSX],DUP,LOD,0,FFX,XCH,STD);                          18860100 T  0421:0
                    GO TO INITIATE;                                                         18860200 T  0424:0
% MEMORY DUMP OR TRACE FROM THE INTRINSICS                                                  18870000 T  0424:2
C48: %                                                                                      18870100 T  0424:2
```

```
 $ SET OMIT = NOT(DUMP OR DEBUGGING)
      IF I4 NEQ 0 THEN
 $ SET OMIT = NOT(DEBUGGING) OR OMIT
      ELSE DUMPNOW(R5);
 $ POP OMIT
      GO INITIATE;%
END OF COMMUNICATE0;
```

```
18870200 T   0424:2
18870300 T   0424:2
18870400 T   0425:3
18870700 T   0425:3
18870800 T   0430:0
18870900 T   0430:0
18872000 T   0430:2
                    18700100
          SIZE= 0431 WORDS
```

```
                    SAVE PROCEDURE COM2;
PRT(643) = COM2
                    BEGIN
                        REAL R4=-4; ARRAY A5=-5[*];
STACK(F-4) = R4
STACK(F-5) = A5
                        SLEEP(.M[A5]],R4);
                        GO TO RETURN;
                    END COM2;
```

```
                                                                %721-       19300000 C  0000:0
                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00652
% SLEEP FUNCTION  (ALGOL WAIT)                                   19301000 C  0000:0
                                                                %721-       19302000 C  0000:0

                                                                %721-       19303000 C  0000:0
                                                                %721-       19304000 C  0002:1
                                                                %721-       19305000 C  0002:3
                                                                                        19301000
                                                                                SIZE= 0003 WORDS
```

```
                    PROCEDURE SHORTCOMMUNICATE;                                                    19500000 T  0000:0
                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00553
                    BEGIN REAL R4=-4,R5=-5,R6=-6,R7=-7,R8=-8,R9=-9;                 % (SHM)         19501000 T  0000:0
STACK(F-4) = R4
STACK(F-5) = R5
STACK(F-6) = R6
STACK(F-7) = R7
STACK(F-10) = R8
STACK(F-11) = R9
                      INTEGER I4=-4,I5=-5,I6=-6;                                                   19502000 T  0000:0
STACK(F-4) = I4
STACK(F-5) = I5
STACK(F-6) = I6
                      ARRAY A4=-4[*],A5=-5[*],A6=-6[*];                                            19503000 T  0000:0
STACK(F-4) = A4
STACK(F-5) = A5
STACK(F-6) = A6
                      ARRAY A7=-7[*];                                                              19504000 T  0000:0
STACK(F-7) = A7
                      NAME N4=-4,N5=-5,N6=-6;                                                      19505000 T  0000:0
STACK(F-4) = N4
STACK(F-5) = N5
STACK(F-6) = N6
                    LABEL C0,C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,                   19506000 T  0000:0
                          C16,C17,C18,C19,C20,C21,C22,C23,C24,C25,C26,C27,C28,                    19507000 T  0000:0
                         C29,C30,C31,C32,C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C43,C44          19508000 T  0000:0
                     ,C46,SL,TW;                                                                 19508010 T  0000:0
                    SWITCH C:=SL,TW,C2,TW,SL,C5,TW,TW,TW,C9,C10,C11,TW,C13,C14,                  19511000 T  0000:0
                             SL,SL,TW,C18,C19,TW,TW,TW,C23,C24,TW,TW,C27,C28,                    19512000 T  0000:0
                             TW,SL,SL,SL,SL,C34,C35,C36,C37,TW,TW,C40,C41,                       19513000 T  0000:0
                             C42,C43,C44,SL,C46,TW,TW,SL;                                        19513010 T  0000:0
                      DEFINE CN=DIFFCOM#;                                                        19515000 T  0000:0
                      LABEL AC0,AC1,AC2,AC3,AC4,AC5;                                             19517000 T  0000:0
                     SWITCH AC ← AC0,AC1,AC2,AC3,AC4,AC5;                                        19518000 T  0000:0
                      REAL I,J,T,RCW=+0;                                                         19519000 T  0000:0
STACK(F+1) = I
STACK(F+2) = J
STACK(F+3) = T
STACK(F+0) = RCW
                      ARRAY AIT[*]; REAL AITL=AIT; ARRAY A=AIT[*];                               19520000 T  0000:0
STACK(F+4) = AIT
STACK(F+4) = AITL
STACK(F+4) = A
                       ARRAY FIB=AIT[*],FPB[*],H[*];LABEL CHANGENAME;                            19521000 T  0000:0
STACK(F+4) = FIB
STACK(F+5) = FPB
STACK(F+6) = H
                      NAME ADDR;                                                                 19522000 T  0000:0
STACK(F+7) = ADDR
                      DEFINE BITS=(IF SB THEN DS←SET ELSE DS←RESET; SKIP SB)#;                   19523000 T  0000:0
                      CHECKSTACKSPACE;%                                          %WF             19525000 T  0000:0
                                                                                                                19525000
                         IF P(PRT[P1MIX,9],DUP) < 0 THEN                                         19525100 T  0006:0
                         BEGIN P(DEL); TERMINATE(P1MIX); TERMINALMESSAGE(81) END;                 19525200 T  0007:3
                                                                                                                19525200
                         GO TO C[P];                                                             19526000 T  0010:0
                   SL: P(.COMMUNICATE1); GO DIFFCOM;                                             19526100 T  0035:3
```

```
TW: P(.COMMUNICATE0); GO DIFFCOM;                                                    19526200 T  0036:2
%       SLEEP                                                                        19541100 T  0037:1
C2:     P(.COM2); GO TO CN;                                          %721-           19542000 P  0037:1
%       RETURN SPECIFIC ARRAY                                                        19543000 T  0038:0
%       EOJ                                                                          19552000 T  0038:0
C5:     P(.COM5); GO TO CN;                                                          19553000 T  0038:0
%       FILL WITH INQUIRY                                                            19559000 T  0038:3
C9:                                                                                  19560000 T  0038:3
 $ SET OMIT = NOT(DATACOM)                                                           19561000 T  0038:3
%       BLOCK EXIT                                                                   19565000 T  0038:3
C10:    P(.ASR); GO TO CN;                                                           19566000 T  0038:3
%       ALGOL I/O FUNCTIONS                                                          19567000 T  0039:2
C11:                                                                 % (SHM)         19568000 T  0039:2
        IF R4=0 THEN FILEOPEN(0,A5,[CF]);                            % (SHM)         19569000 T  0039:2
        IF R4=6 THEN                                                 % (SHM)         19570000 T  0042:2
           BEGIN FILECLOSE(NFLAG(A5)); GO TO INITIATE END;           % (SHM)         19571000 T  0043:1
                                                                                                          19571000
        IF R4=4 THEN                                                 % (SHM)         19572000 T  0045:2
           BEGIN                                                     % (SHM)         19573000 T  0046:1
           IF A5[4] THEN % FILE IS IN DIRECTORY                      % (SHM)         19574000 T  0046:3
           FORGETSPACE(DIRECTORYSEARCH(R8,R7,-(A5.[CF])&R6[CTF])) ELSE              19575000 T  0047:1
              BEGIN                                                  % (SHM)         19576000 T  0051:0
              IF (T:=R9.[18:5]) GTR 0 THEN % EU SPECIFIED            % (SHM)         19576100 T  0051:2
                 T:=(IF T GTR 20 THEN 0 ELSE -T) ELSE                % (SHM)         19576200 T  0053:1
              IF (T:=R9.[16:2]) GTR 0 THEN % SPEED SPECIFIED         % (SHM)         19576300 T  0056:3
                 T:=(IF T GTR 2 THEN 0 ELSE T) ELSE                  % (SHM)         19576400 T  0059:0
              T:=0; % NO SPEED OR EU SPECIFIED                       % (SHM)         19576500 T  0062:1
              A5[R6]:=PETUSERDISK(A5[8],T);                          % (SHM)         19576600 T  0063:2
              END;                                                   % (SHM)         19576700 T  0065:3
                                                                                                          19576000
           GO TO INITIATE;                                           % (SHM)         19577000 T  0065:3
           END;                                                      % (SHM)         19577100 T  0066:1
                                                                                                          19573000
        P(.COM11); GO TO DIFFCOM;                                    % (SHM)         19578000 T  0066:1
%       COBOL I/O FUNCTIONS                                                          19579000 T  0067:0
C13:    P(.COM13); GO TO CN;                                                         19580000 T  0067:0
%       INVERT OVERLAYABLE STATUS                                                    19581000 T  0067:3
C14:    IF NOT N4[0].[2:1] THEN MAKEPRESENT([N4[0]] INX 0);                          19582000 T  0067:3
        M[N4[0] INX NOT 1]←P(DUP,LOD)&P(DUP,LNG)[2:2:1];                             19583000 T  0070:2
        GO TO INITIATE;                                                              19584000 T  0074:1
%       ERROR - INQUIRY WRITE                                                        19584200 T  0074:3
C18:                                                                                 19584300 T  0074:3
 $ SET OMIT = NOT(DATACOM)                                                           19584400 T  0074:3
        GO TO INITIATE;                                                              19584700 T  0074:3
%       PRINT BACK-UP                                                                19585000 T  0075:1
C19:    P(.COM19); GO TO CN;                                                         19586000 T  0075:1
%       LOAD CONTROL                                                                 19587000 T  0076:0
C23:    P(.COM23); GO TO CN;                                                         19588000 T  0076:0
%       RETURN ONE ROW OF A DISK FILE                                                19589000 T  0076:3
C24:    T:=A4[R5]; A4[R5]:=0;                                                        19590000 T  0076:3
 $ SET OMIT = SHAREDISK                                                              19591000 T  0079:1
        FORGETUSERDISK(T,A4[8]);                                                     19592000 T  0079:1
 $ POP OMIT                                                                          19592001 T  0080:2
 $ SET OMIT = NOT(SHAREDISK)                                                         19593000 T  0080:2
        GO TO INITIATE;                                                              19595000 T  0080:2
%       COBOL DATACOM I INTERROGATE                                                  19601000 T  0081:0
C27:;                                                                                19602000 T  0081:0
```

```
 $ SET OMIT = NOT(DATACOM )                                                                19603000 T  0081:0
       GO INITIATE;                                                                        19637000 T  0081:0
%      ALGOL DATACOM I INTERROGATE                                                        19638000 T  0081:2
C28:;                                                                                     19639000 T  0081:2
 $ SET OMIT = NOT(DATACOM )                                                               19640000 T  0081:2
       GO INITIATE;                                                                       19668000 T  0081:2
C34:; IF (T←R4) > 0 THEN STREAM(R4,T←T←SPACE(17));                                        19680200 T  0082:2
       BEGIN SI←R4; DS←17 WDS END;                                                        19680300 T  0087:3
                                                                                                      19680300
       TERMINATE(P1MIX);%                                                                 19680400 T  0088:2
       TERMINALMESSAGE("T);%                                                              19680500 T  0089:1
C35:;     IF R4.[18:4]=1 THEN P(.LIBRARYZERO)                                             19681000 T  0090:1
                         ELSE P(.LIBRARYCOPY);                                            19681100 T  0093:0
          GO TO CN;                                                                       19682000 T  0093:3
C36:;     % TYPE 19 DATACOM I/O INTERFACE                                                 19683000 T  0094:1
 $ SET OMIT = DATACOM                                                                     19683499 T  0095:0
          GO TO INITIATE;                                                                 19683500 T  0095:0
 $ POP OMIT                                                                               19683501 T  0095:2
 $ SET OMIT = NOT(DATACOM )                                                               19684000 T  0095:2
C37:;                                                                                     19685010 T  0095:2
          AIT←JARROW[P1MIX];                                                              19685015 T  0095:2
        IF AIT[9].[FF]=0 THEN AIT[9].[FF]←GETESPDISK;                                     19685020 T  0097:0
        H←[M[SPACE(5)]]&5[8:38:10];                                                       19685025 T  0101:1
        H[1]←R5;H[2]←R4;                                                                  19685030 T  0105:0
 $ SET OMIT = NOT(DATACOM )                                                               19685035 T  0107:2
 $ SET OMIT = DATACOM                                                                     19685050 T  0107:2
        H[3]←0;                                                                           19685055 T  0107:2
 $ POP OMIT                                                                               19685060 T  0108:3
        DISKWAIT(H INX 0,5,AIT[9].[FF]);                                                  19685065 T  0108:3
        FORGETSPACE(H);                                                                   19685070 T  0111:2
        GO TO INITIATE;                                                                   19685075 T  0112:2
C40:; IF R5.[8:10]=1023 THEN                                                              19685340 T  0113:0
       BEGIN M[R5.[CF]]:=PRNTABLE[R5.[FF]];GO INITIATE;END ELSE                           19685350 T  0114:1
                                                                                                      19685350
       IF R5.[CF]=0 THEN                                                                  19685360 T  0118:0
       BEGIN LINKUP(R6,R5:=R5.[FF]);                                                      19685370 T  0119:3
             SLEEP([M[R5]],@1000000000000000); GO RETURN;                                 19685380 T  0122:1
       END ELSE                                                                           19685390 T  0124:3
                                                                                                      19685370
       IF R5.[15:15]=0 THEN                                                               19685400 T  0124:3
       BEGIN                                                                              19685410 T  0128:1
 $ SET OMIT = NOT(DATACOM )                                                               19685419 T  0128:3
 $ SET OMIT = DATACOM                                                                     19685429 T  0128:3
             M[R5]:=0;                                                                    19685430 T  0128:3
 $ POP OMIT                                                                               19685431 T  0130:1
             GO INITIATE;                                                                 19685440 T  0130:1
       END ELSE                                                                           19685450 T  0130:3
                                                                                                      19685410
       IF R5.[FF]=@77777 THEN                                                             19685452 T  0130:3
       BEGIN M[R5]:=MOD310S; GO INITIATE; END ELSE                                        19685456 T  0132:2
                                                                                                      19685456
       BEGIN INDEPENDENTRUNNER(P(.DKBUSINESS),R5,128); SLEEP([M[R5]],1);                  19685460 T  0135:2
             GO RETURN;                                                                   19685470 T  0140:1
       END;                                                                               19685480 T  0140:3
                                                                                                      19685460
C41:; IOREQUEST(R7,R6,FLAG(R5)); GO INITIATE;                                             19685550 T  0140:3
C42:; P(..TISKTASK); GO TO CN;                                                            19685560 T  0143:0
```

```
C43:1    H ← PRT[P1MIX,TSX]; % SET TASK ATTRIBUTES                          19685570 T  0143:3
         H[1] ← JAR[P1MIX,0]; H[2] ← JAR[P1MIX,1];                          19685580 T  0145:2
         H[3] ← 2;            H[4] ← P1MIX;          H[6] ← 2;             19685585 T  0149:2
         GO TO INITIATE;                                                    19685590 T  0153:1
C44:1 P(.,PICKTHELOCK); GO TO CN;                                           19685595 T  0153:3
C46:1 P(.,EVENTANDINTERRUPT); GO TO CN;   % ATTACH, DETACH, CAUSE STMTS     19685596 T  0154:3
END OF SHORT COMMUNICATE;%                                                  19686000 T  0155:3
                                                                                          19501000
                                                                                  SIZE= 0156 WORDS
```

```
PROCEDURE TISKTASK;                                                    19687000 T  0000:0
                                                    START OF REL SEGMENT; DISK ADDRESS = 00559
 % A  COBOL OR ALGOL PROGRAM WHICH EITHER CONTAINS OR IS INVOKED BY A   19687100 T  0000:0
 % PROCESS, CALL, OR RUN/EXECUTE STATEMENT, OR MANIPULATES LOCKS (COBOL) 19687120 T  0000:0
 % OR EVENTS (ALGOL), WILL BE FLAGGED IN SEGMENT 0 (WORD 2 [3:1]=1) OF  19687140 T  0000:0
 % ITS CODE FILE AS HAVING A TASK ARRAY.                                19687150 T  0000:0
 % THE FORMAT OF THE TASK ARRAY (MYSELF AT PRT[TSX]) IS AS FOLLOWS      19687200 T  0000:0
 %      TSKA[0]          = TASKVALUE: PROVIDED FOR USER                 19687300 T  0000:0
 %      TSKA[1]          = 7 CHR MFID OF CODE FILE                      19687400 T  0000:0
 %      TSKA[2]          = 7 CHR FID OF CODE FILE                       19687500 T  0000:0
 %      TSKA[3]          = STATUS: 1=SCHEDULED                          19687600 T  0000:0
 %                                 2=ACTIVE                            19687610 T  0000:0
 %                                -1=TERMINATED (DS-ED OR EOJ)         19687650 T  0000:0
 %                                -2=INITIATION ATTEMPTED BUT FAILED   19687680 T  0000:0
 %      TSKA[4]          = STACKNO: MIX INDEX IF RUNNING                19687700 T  0000:0
 %                                  SCHEDULE-ID IF SCHEDULED           19687750 T  0000:0
 %      TSKA[5]          =HEAD OF LIST OF LOCK-ITEMS IN CONTROL OR QUEUED 19687780 T  0000:0
 %      TSKA[6]          = TYPE: 0=ASYNCHRONOUS DEPENDENT (PROCESS)     19687800 T  0000:0
 %                               1=SYNCHRONOUS DEPENDENT  (CALL)       19687840 T  0000:0
 %                               2=INDEPENDENT            (RUN/EXECUTE) 19687850 T  0000:0
 %      TSKA[7]          = CALL STATE: 0=INITIAL                        19687860 T  0000:0
 %                                     1= EXIT PROGRAM/                19687870 T  0000:0
 %                                        EXIT PROGRAM RETURN HERE     19687872 T  0000:0
 %                                     2=CONTINUED OR RE-CALLED        19687874 T  0000:0
 %      TSKA[8]          : [1:1]=1 IFF JUST EXECUTED INTERRUPTER INTRINSC 19687876 T  0000:0
 %                           AND SFINTQ IS NON-EMPTY                    19687878 T  0000:0
 %                         [2:1]=1 IFF SFINTQ IS NON-EMPTY              19687880 T  0000:0
 %                         [3:1]=1 IFF INTERRUPTER INTRINSIC IS RUNNING 19687882 T  0000:0
 %                         [4:1] = SFINTQ INTERLOCK BIT (ON TO START)   19687883 T  0000:0
 %                         [FF] = ABSOLUTE ADDRESS OF OLD IRCW          19687884 T  0000:0
 %                         [CF] = HEAD OF LIST OF DECLARED INTERRUPTS   19687885 T  0000:0
 % SEGMENT 0 FOR IPC PROGRAM FILES:                                     19687886 T  0000:0
 %      S[2].[2:1]           =1 IF THERE ARE DECLARED INTERRUPTS        19687887 T  0000:0
 %      S[2].[3:1]           =1 FOR AN IPC PROGRAM FILE                 19687888 T  0000:0
 %                           (EITHER INVOKING OR INVOKED)               19687889 T  0000:0
 %      S[2].[4:1]           =1 FOR AN INVOKED IPC PROGRAM FILE         19687890 T  0000:0
 % NOTE: S[2].[2:3] = JAR[2].[5:3]. JAR[2].[6:1]=1 INDICATES TO COMS    19687892 T  0000:0
 %       THAT THIS JOB MAY HAVE DEPENDENT TASK DESCENDENTS TO BE DS-ED  19687894 T  0000:0
 %       OR ES-ED AND LOCK QUEUES TO BE CLEANED UP WHEN IT TERMINATES.  19687896 T  0000:0
 %      S[8]                 NUMBER OF TASK PARAMETERS TO BE RECEIVED   19687898 T  0000:0
 %                           ( = N BELOW).                              19687900 T  0000:0
 %      S[9]                 DISK ADDRESS OF PARAMETER DESCRIPTION SEG  19687910 T  0000:0
 %  FORMAT OF ENTRY IN PARAMETER DESCRIPTION SEGMENT:                    19687920 T  0000:0
 %      (BEGINNING IN WORD 1)                                            19687925 T  0000:0
 %      [18:15] : TYPE =   0  TASK ARRAY      - NAME                     19687930 T  0000:0
 %                         1  EVENT/LOCK      - NAME                     19687935 T  0000:0
 %                         2  PRT CELL        - NAME                     19687940 T  0000:0
 %                         3  PRT CELL        - VALUE                    19687945 T  0000:0
 %                         4  (SAVE) ARRAY    - NAME                     19687950 T  0000:0
 %                         5  ARRAY           - VALUE                    19687955 T  0000:0
 % (ONLY 1-DIMENSIONAL ARRAYS CAN BE PASSED AS TASK PARAMETERS).        19687957 T  0000:0
 %      [8:10]  : SIZE  =  SIZE OF ARRAY FOR TYPES 4 AND 5, ELSE 0      19687960 T  0000:0
 %      [33:15] : LOCATION=PRT LOCATION FOR TYPES 0-4, FOR TYPE 5:      19687965 T  0000:0
 %                        =RELATIVE DISK ADDRESS OF TYPE-2 SEGMENT      19687970 T  0000:0
 % TISTASK MAKES A TEST FOR AGREEMENT BETWEEN THE TASK PARAMETERS       19687975 T  0000:0
 % SPECIFIED IN THE PARAMETER DESCRIPTION SEGMENT AND THOSE SPECIFIED BY 19687977 T  0000:0
 % THE F= CELLS (SEE BELOW). LACK OF AGREEMENT EITHER DS-ES THE PARENT  19687980 T  0000:0
```

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                % OR CAUSES A 1 TO BE RETURNED (IN THE CASE OF A COBOL PROGRAM WHICH          19687982 T  0000:0
                % CONTAINS AN "ON EXCEPTION" CLAUSE).                                       19687984 T  0000:0
                % TISKTASK COPIES THE CODE FILE, FILLING NAME AND VALUE PARAMETERS INTO      19687990 T  0000:0
                % THE NEW PRT AND WRITING OUT VALUE ARRAYS AS TYPE=2 SEGMENTS. THE JOB       19687995 T  0000:0
                % IS ENTERED IN THE SCHEDULE AND THE SCHEDULE-ID IS ENTERED IN THE          19687997 T  0000:0
                % TASK ARRAY. THE NEW SHEET ENTRY IS FLAGGED A GO JOB (AS FROM A            19687998 T  0000:0
                % COMPILE-AND-GO).                                                         19687999 T  0000:0
               BEGIN                                                                       19688000 T  0000:0
                   REAL MFID=-4,FID=-5,      % FILE ID OF CODE FILE TO BE INVOKED          19688050 T  0000:0
STACK(F-4) = MFID
STACK(F-5) = FID
                                             % MFID<0  IF ON EXCEPTION CLAUSE IS PRESENT   19688060 T  0000:0
                                             % FID<0   IF CALL OR CONTINUE STATEMENT       19688070 T  0000:0
                         N=-6;               % NUMBER OF F- PARAMS BETWEEN F-7 AND MKSCW    19689000 T  0000:0
STACK(F-6) = N
                                             %    THERE WILL BE A PAIR OF F- CELLS FOR     19689010 T  0000:0
                                             %    EACH TASK PARAMETER, F(-I) CONTAINS      19689020 T  0000:0
                                             %    THE NAME OR VALUE OF THE PARAMETER,      19689030 T  0000:0
                                             %    F(-(I+1)) CONTAINS THE TYPE              19689040 T  0000:0
                                             %    (AS IN SEGMENT 0),                       19689050 T  0000:0
                                             %    (TSKA IS THE FIRST TASK PARAMETER)       19689060 T  0000:0
                                             % N<0 IF CONTINUE STATEMENT                    19689070 T  0000:0
                   ARRAY NAME PARM;                                                        19691000 T  0000:0
STACK(F+1) = PARM
                   ARRAY S[*],R[*],H[*],D[*],W[*],                                         19692000 T  0000:0
STACK(F+2) = S
STACK(F+3) = R
STACK(F+4) = H
STACK(F+5) = D
STACK(F+6) = W
                         TSKA=-7[*];         % TASK ARRAY DESCRIPTOR FOR PROCESS, CALL    19692100 T  0000:0
STACK(F-7) = TSKA
                                             % INTEGER = TASK ARRAY LENGTH FOR RUN       19692200 T  0000:0
                   REAL T,T1,T2,T3,T4,ONEXCEPTION,CALLEDORCONT,                            19693000 T  0000:0
STACK(F+7) = T
STACK(F+10) = T1
STACK(F+11) = T2
STACK(F+12) = T3
STACK(F+13) = T4
STACK(F+14) = ONEXCEPTION
STACK(F+15) = CALLEDORCONT
                         VARRAY,IOD,IOD1,NR,SR,HADDR,PRTRLOC,PRTSZ,ERR,SZ,S1,CR,PRTS;     19694000 T  0000:0
STACK(F+16) = VARRAY
STACK(F+17) = IOD
STACK(F+20) = IOD1
STACK(F+21) = NR
STACK(F+22) = SR
STACK(F+23) = HADDR
STACK(F+24) = PRTRLOC
STACK(F+25) = PRTSZ
STACK(F+26) = ERR
STACK(F+27) = SZ
STACK(F+30) = S1
STACK(F+31) = CR
STACK(F+32) = PRTS
                         LABEL L1,ERROR,NEXTROW,L2,XYT;                                  19695000 T  0000:0
                         INTEGER PADDR,ADDR;                                             19696000 T  0000:0
```

```
STACK(F+33) = PADDR
STACK(F+34) = ADDR
          REAL COMMON,F,ESTPROC,ESTIO,STKSZ;                                %110-        19696100 C  0000:0
STACK(F+35) = COMMON
STACK(F+36) = F
STACK(F+37) = ESTPROC
STACK(F+40) = ESTIO
STACK(F+41) = STKSZ
          DEFINE CONTINUED = VARRAY#, SAVEBIT = 10D1#;                                          19696500 T  0000:0
               ONEXCEPTION ← MFID<0; MFID ← ABS(MFID);                                          19696600 T  0000:0
               CALLEDORCONT ← FID<0; FID ← ABS(FID);                                            19696700 T  0010:2
               CONTINUED ← N<0; N ← ABS(N);                                                     19696800 T  0012:3
               PARM ← [N];                                                                      19697000 T  0015:0
               IF CALLEDORCONT THEN          % CALL OR CONTINUE STATEMENT                        19697200 T  0015:3
          BEGIN     IF CONTINUED THEN IF TSKA[3]#2 OR TSKA[7]#1 THEN                            19697300 T  0016:0
                         BEGIN     ERR ← 1; TERMINATE(P1MIX&98[CTF]); GO XYT;                   19697400 T  0019:2
                         END;                                                                   19697500 T  0022:2
                                                                                                             19697400
                    IF TSKA[3]=2 THEN IF TSKA[7]=1 THEN                                         19697600 T  0022:2
                         BEGIN     TSKA[7] ← 2; GO XYT;                                         19697700 T  0025:0
                         END ELSE ELSE TSKA[7] ← 0;                                             19697800 T  0027:1
                                                                                                             19697700
          END;                                                                                  19697900 T  0029:2
                                                                                                             19697300
               IF (T:=DIRECTORYSEARCH(MFID,FID,3)) GEQ 64 THEN                                  19698000 T  0029:2
          BEGIN     IF SECURITYCHECK(MFID,FID,USERCODE[P1MIX],T)=0 THEN                         19699000 T  0031:3
L1:            BEGIN     ERR ← 1;                                                             19700000 T  0034:2
                         IF T GEQ 64 THEN FORGETSPACE(T);                                       19700500 T  0035:3
                         GO ERROR;                                                              19701000 T  0037:3
               END;                                                                             19702000 T  0038:1
                                                                                                             19700000
               IF MEM INX 4].[9:2]≠3 THEN GO L1; % NOT EXECUTABLE CODE                          19703000 T  0038:1
     END ELSE GO L1;                                                                            19704000 T  0041:1
                                                                                                             19699000
               IF TSKA.PBIT THEN IF TSKA[3]≥1 THEN GO L1;                                       19704100 T  0041:1
               S ← [MEMGETSPACE(30,2,0)+2]]&30[8:38:10];                                        19705000 T  0044:1
% READ SEGMENT ZERO INTO S
               DISKWAIT(-S,[CF],30,MEM INX 10]);                                                19706000 T  0048:0
               IF S[8]≠N THEN                                                                   19707000 T  0048:0
L2:  BEGIN     FORGETSPACE(S);                                                                  19708000 T  0051:2
               GO L1;                                                                           19709000 T  0052:2
     END;                                                                                       19710000 T  0054:0
                                                                                                19711000 T  0054:2
                                                                                                             19709000
               W ← [MEMGETSPACE(T3←N DIV 2+1,2,0)+2]]&T3[8:38:10];                              19711100 T  0054:2
% READ IPC PARAMETER DESCRIPTION SEGMENT INTO W
               DISKWAIT(-W,[CF],T3,ADDR ← MEM INX (10+((T2←S[9])                                19711200 T  0059:3
                    DIV (SR←MEM INX 8])))] + (T2 MOD SR));                                      19711300 T  0059:3
               FOR T1 ← 2 STEP 2 UNTIL N DO                                                     19711400 T  0062:1
                    IF PARM[NOT(T1-1)]≠W[T1 DIV 2].[FF] THEN                                    19713000 T  0068:1
                         BEGIN     FORGETSPACE(W);                                              19714000 T  0069:0
                                   GO L2;                                                       19714100 T  0072:2
                         END;                                                                   19714200 T  0074:0
                                                                                                19714300 T  0074:2
                                                                                                             19714100
% READ PRT INTO R
               R ← [MEMGETSPACE(S[3],2,0)+2]]&S[3][8:38:10];                                    19718000 T  0076:3
               DISKWAIT(-R,[CF],S[3],PADDR ← MEM INX (10+((PRTS←S[2],[CF])                      19719000 T  0076:3
                    DIV SR))] + (PRTS MOD SR));                                                 19720000 T  0081:0
                                                                                                19721000 T  0083:3
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      FOR T1 ← 2 STEP 2 UNTIL N DO                                                    19722000 T  0088:2
        IF PARM[NOT(T1-1)]=5 THEN          % PASS-BY-VALUE ARRAY                   19723000 T  0090:0
BEGIN   PARM[NOT(T1-1)] ← W[T1 DIV 2].[CF]; % RELATIVE DISK LOCA-                   19724000 T  0092:1
        VARRAY ← VARRAY+1;                  % TION OF TYPE-2 SEG                    19725000 T  0096:1
END ELSE                                                                          19726000 T  0097:2
                                                                                              19724000
BEGIN   R[W[T1 DIV 2].[CF]] ← *[PARM[NOT(T1-2)]];% PLACE NAME                     19727000 T  0097:2
        PARM[NOT(T1-1)] ← -@77777;          % OR VALUE IN PRT                    19728000 T  0102:0
END;                                                                              19729000 T  0104:2
                                                                                              19727000
% BUILD HEADER FOR NEW CODE FILE IN H                                            19730000 T  0106:3
      H ← [M[GETSPACE(30,2,0)+2]]&30[8:38:10];                                    19731000 T  0106:3
      MOVE(30,T INX 0,[H]);                                                       19732000 T  0110:2
      H[2] ← H[5] ← H[6] ← 0;                                                     19733000 T  0112:3
      T4 ← M[T INX 9].[43:5]-1;                                                   19733400 T  0116:0
      WHILE M[T INX (10+NR)]≠0 AND NR≤T4 DO NR ← NR+1; % NR = # ROWS              19733600 T  0119:0
      T4 ← NR+9;                                                                  19734000 T  0126:0
      H[4].[16:20] ← 0;                                                           19735000 T  0127:1
      H[9] ← NR;                                                                  19735050 T  0129:3
      FOR T1 ← 10 STEP 1 UNTIL T4 DO H[T1] ← GETUSERDISK(SR);                     19736000 T  0131:0
      HADDR ← GETFSPDISK;                                                         19737000 T  0136:1
      DISKIO(IOD,H INX 0-1,30,HADDR);                                             19738000 T  0137:1
      F ← S[15];              % SAVE LABEL EQUATION ENTRIES          %110-         19738100 C  0140:0
      ESTPROC:=S[16];         % SAVE ESTIMATED PROCESSOR TIME         %110-         19738110 C  0141:0
      ESTIO:=  S[17];         % SAVE ESTIMATED I/O TIME               %110-         19738120 C  0142:0
      COMMON ← S[19];         % SAVE COMMON VALUE                     %110-         19738200 C  0143:0
      STKSZ:=  S[21];         % SAVE STACK SIZE                       %110-         19738210 C  0144:0
      CR ← S[7].[FF];             % SAVE CORE REQ,                                  19739000 T  0145:0
      PRTRLOC ← PRTS DIV SR;      % ROW PRT IS LOCATED IN                           19740000 T  0146:2
      PADDR ←(PRTS MOD SR);       % WHICH SEGMENT IN ROW                            19741000 T  0147:3
      PRTSZ ←((S[3]+29) DIV 30); % NUMBER OF SEGMENTS IT OCCUPIES                   19742000 T  0149:0
      SLEEP([IOD],[OMASK);                                                        19743000 T  0151:0
      S1 ← SR-1;                  % NO. OF SEGS/ROW - 1                           19744000 T  0152:2
      FOR T1 := 10 STEP 1 UNTIL T4 DO % COPY CODE FILE CHANGEING%110-           19746000 P  0153:3
        BEGIN                           % PRT & PASS-BY-VALUE SEGMENT            19747000 P  0155:0
        FOR T3 := 0 STEP 1 UNTIL S1 DO % COPY ROW              %171-            19748000 P  0155:0
          BEGIN                                                %110-            19749000 P  0156:0
          DISKWAIT(-S,[CF],30,M[T INX T1]+T3); % READ SEGMENT %110-              19750000 P  0156:0
          IF(T1=10) THEN IF(T3=0) THEN S[2].[3:2] ← 3; % INVOKED                19750100 C  0160:0
          DISKWAIT( S,[CF],30,H[T1]      +T3); % WRITE IT BACK%110-              19751000 P  0165:0
          END;                                                 %110-            19752000 P  0167:3
                                                                                              19749000
        IF(T1=10)=PRTRLOC THEN % PRT IS IN THIS ROW            %110-            19753000 P  0170:0
          DISKWAIT(R,[CF],PRTSZ×30,H[T1]+PADDR); % WRITE OUT PRT                 19754000 P  0171:1
        IF VARRAY > 0 THEN % LOOK FOR TYPE-2 SEGMENTS IN THIS ROW               19755000 C  0175:0
        FOR T2:=2 STEP 2 UNTIL N DO                            %110-            19756000 C  0175:3
        IF(T1=10)=(PARM[NOT(T2-1)]DIV SR) THEN                 %110-            19757000 C  0177:0
        % WE HAVE A TYPE-2 SEGMENT IN THIS ROW                 %110-            19758000 P  0180:1
          BEGIN % MOVE SEGMENT TO CODE FILE ROW                %110-            19759000 P  0180:1
          SZ:=(W[T2 DIV 2].[8:10]+29) DIV 30;                  %110-            19760000 C  0180:3
          D:=PARM[NOT(T2-2)];                                  %110-            19761000 C  0183:3
          ADDR:=(PARM[NOT(T2-1)]MOD SR);                       %110-            19762000 P  0186:0
          VARRAY:=VARRAY-1;                                    %110-            19763000 P  0188:3
          WHILE D.PBIT=0 DO                                    %110-            19764000 P  0190:0
            MAKEPRESENT([T] INX(NOT 1)); % ADDRESS OF D         %110-            19765000 C  0192:0
          SAVEBIT:=M[D INX (NOT 1)].[2:1];                     %110-            19766000 P  0194:0
          P(M[D INX (NOT 0)]);                                 %110-            19766100 C  0197:0
```

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                MID INX (NOT 1)],[2:1]:=1;                                %110-      19766200 C  0199:0
                DISKWAIT(D,[CF],SZ*30,H[T1]+ADDR);                        %110-      19766300 C  0202:3
                MID INX (NOT 0)]:=P(XCH);                                 %110-      19766400 C  0206:0
                MID INX (NOT 1)],[2:1]:=SAVEBIT;                          %110-      19766500 C  0208:2
                END;                                                      %110-      19766600 C  0212:1
                                                                                                    19759000
             END;                                                         %110-      19766700 C  0214:2
                                                                                                    19747000
             FORGETSPACE(R); FORGETSPACE(T); FORGETSPACE(W);              %110-      19766800 C  0216:3
% BUILD SHEET SKELETON IN S                                                         19767700 T  0219:2
        STREAM(S);BEGIN  30(DS ← 8 LIT "0"); END;                                  19767750 T  0219:2
                                                                                                    19767750
        S[20] ← CR;                                                                19767760 T  0222:2
        S[25] ← HADDR;                                                             19767800 T  0223:3
        S[0] ← MFID;                                                               19767900 T  0225:0
        S[1] ← FID;                                                                19768000 T  0226:1
        S[2] ← S[18] ← PRYOR[P1MIX];                                               19768050 T  0227:2
% WRITE OUT DUMMY CONTROL CARD FOR LOGGING ROUTINE                                 19768100 T  0230:0
        STREAM(X←S[24]←USERCODE[P1MIX], MFID, FID, T←[H[2]] );    %722-      19768200 P  0230:0
        BEGIN SI←LOC X; DS←9 LIT "CC USER =";                     %722-      19768300 P  0233:0
              SI←SI+1; DS←7 CHR; DS←9 LIT ";EXECUTE ";            %722-      19768400 P  0234:3
              2(SI←SI+1; DS←7 CHR; DS←LIT "/"); DI←DI-1;          %722-      19768450 P  0236:3
              DS←6 LIT ";END.←"; DS←26 LIT " ";                   %722-      19768500 P  0238:2
        END STREAM;                                                            19768550 T  0243:0
                                                                                                    19768300
        H[0] ← 0;                                                              19768600 T  0243:1
        H[1] ← 10;                                                             19768650 T  0244:2
        S[6] ← GETESPDISK & 10 [CTF];                                          19768700 T  0245:3
        DISKWAIT(H,[CF],11,S[6] INX 0);                                        19768750 T  0247:3
 $ SET OMIT = NOT PACKETS                                                  %110-      19768760 C  0250:2
% PUT DUMMY CONTROL CARD IN PACKET PAGE ALSO                              %110-      19768762 C  0250:2
        IF (T←PSEUDOMIX[P1MIX]) GEQ 32 THEN % ITS A PACKET JOB            %110-      19768764 C  0250:2
           BEGIN                                                          %110-      19768766 C  0252:0
           STREAM(A←[JAR[P1MIX,0]],M←P1MIX,B←[H[2]],T1←T1←SPACE(10));               19768768 C  0252:2
           BEGIN                                                          %110-      19768770 C  0257:0
           DS←3 LIT">>>"; SI←B; DS←30 CHR; DS←14 CHR;                     %722-      19768772 C  0257:0
           DS←13 LIT", INVOKED BY "; SI←A; SI←SI+1; DS←7 CHR;DS←LIT"/";   %722-      19768774 C  0258:2
           SI←SI+1; DS←7 CHR; DS←LIT"=";SI←LOC M; DS←2 DEC;               %110-      19768776 C  0261:3
           DS←LIT LEFTARROW; DI←DI-3; DS←FILL;                            %110-      19768778 C  0263:1
           END;                                                           %110-      19768780 C  0264:1
                                                                                                    19768770
           SPOUTER(T1,T,0);                                               %110-      19768782 C  0264:2
           END;                                                           %110-      19768784 C  0265:3
                                                                                                    19768766
 $ POP OMIT                                                               %110-      19768786 C  0265:3
        SLEEP([TOGLE],SHEETMASK); LOCKTOG(SHEETMASK);                              19768800 T  0265:3
                                                                                                    19768800
        STREAM(A←0;B←P(.SCHEDULEIDS));                                             19768900 T  0270:3
        BEGIN SI←B;                                                                19768950 T  0272:0
              47(SKIP SB; SKIP DB; TALLY←TALLY+1;                                  19769000 T  0272:1
                 IF SB THEN BEGIN END ELSE JUMP OUT);                              19770000 T  0273:1
                                                                                                    19770000
              DS←SET; A←TALLY;                                                     19771000 T  0274:3
        END STREAM;                                                                19772000 T  0275:1
                                                                                                    19768950
        T1 ← P; S[3] ← 0&T1[8:38:10];                                              19773000 T  0275:2
        S[23]:=0&(                                                        %110-    19774000 P  0278:1
```

```
$ SET OMIT = NOT PACKETS
                IF(T+PSEUDOMIX[P1MIX])≠0 THEN T
                ELSE
$ POP OMIT
$ SET OMIT = NOT DATACOM
                26)[2:42:6]
$ SET OMIT = NOT DATACOM
                &((CLOCK+P(RTR)) DIV 60)[24:24:24];
$ SET OMIT = NOT PACKETS
      IF T GEQ 32 THEN PACKETACT[T-32]←PACKETACT[T-32]+1;
$ POP OMIT
      S[24]:=USERCODE[P1MIX];
      S[12]:=512;
      S[15] ← F; % PUT LABEL EQUATION ENTRIES IN SHEET
      S[16]:=ESTPROC;
      S[17]:=EST10;
      S[19] ← COMMON; % AND COMMON
      S[21]:=STKSZ;
      HADDR ← GETESPDISK;
      IF SHEET[0].[CF]≠0 THEN
   BEGIN    DISKWAIT(-H,[CF],30,T2 ← SHEET[0].[FF]);
            H[29] ← HADDR;
            DISKWAIT(H,[CF],30,T2);
   END ELSE SHEET[0] ← HADDR;

      SHEET[0].[FF] ← HADDR;
      S[29] ← 0;
      DISKWAIT(S,[CF],30,HADDR);
      UNLOCKTOG(SHEETMASK); FORGETSPACE(S); FORGETSPACE(H);

   ERROR::
         IF TSKA.PBIT THEN
      BEGIN    TSKA[3] ← 1-3×ERR;          % STATUS: SCHEDULED OR ERROR
               IF NOT ERR THEN TSKA[4] ← T1; % SCHEDULE-ID
      END;

         IF ERR AND NOT ONEXCEPTION THEN TERMINATE(P1MIX&94[CTF]) ELSE
         PARM[NOT(N+1)] ← ERR; % PLACE BOOLEAN IN WORD BELOW MKSCW FOR
                               % ON EXCEPTION BRANCH IN COBOL
         P(DIRECTORYSEARCH(NAME(MFID),FID,13),DEL);%CLOSE,FORGET HEADER
         IF NOT ERR THEN SELECTION;
   XYT:: IF CALLEDORCONT AND NOT ERR THEN COMPLEXSLEEP((TSKA[7] AND 1)
                  OR (TERMSET(P1MIX)));                          %110-
18840900    ACCIDENTAL ENTRY AT 1
      END TISKTASK;
```

```
%110-    19774050 C  0279:0
%110-    19774100 C  0279:0
%110-    19774150 C  0281:0
%110-    19774200 C  0281:3
%110-    19774250 C  0281:3
%110-    19774450 C  0281:3
%110-    19774500 C  0282:0
%110-    19774650 C  0282:0
%110-    19774700 C  0285:1
%110-    19774750 C  0285:1
%110-    19774800 C  0291:1
%110-    19774850 C  0291:1
%110-    19775000 P  0292:3
%110-    19775100 C  0294:0
%110-    19776000 P  0295:1
%110-    19776010 C  0296:2
%110-    19776100 C  0297:3
%110-    19776110 C  0299:0
         19777000 T  0300:1
         19778000 T  0301:1
         19779000 T  0302:3
         19780000 T  0306:3
         19781000 T  0308:0
         19782000 T  0310:0
                        19779000
         19783000 T  0311:3
         19784000 T  0313:3
         19785000 T  0315:0
         19786000 T  0317:0
                        19786000
         19787000 T  0322:2
         19788000 T  0322:2
         19791000 T  0324:0
         19792000 T  0326:3
         19793000 T  0329:0
                        19791000
         19796000 T  0329:0
         19797000 T  0331:3
         19798000 T  0334:2
         19799000 T  0334:2
         19799050 T  0336:1
         19799060 P  0338:2
         19799070 C  0340:0

         19800000 T  0347:3
                        19688000
                  SIZE= 0348 WORDS
```

```
PROCEDURE PICKTHELOCK;                                                                  19900000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00571
BEGIN COMMENT THIS PROCEDURE HANDLES LOCKING/UNLOCKING OF                               19900010 T  0000:0
              LOCK-ITEMS FOR TASKING. IT ALSO HANDLES THE MAINTENANCE                   19900020 T  0000:0
              OF A WAIT QUEUE AND PASSING CONTROL OF THE LOCK TO THE                    19900030 T  0000:0
              FIRST PROCESS IN THE WAIT QUEUE. AFTER IT HAS BEEN                        19900040 T  0000:0
              RELEASED BY ANOTHER PROCESS. THE HEAD OF THE QUEUE IS                     19900050 T  0000:0
              THE LOCK-ITEM OF THE PROCESS CURRENTLY IN CONTROL AND                     19900060 T  0000:0
              ENTRIES ARE MADE AT THE END OF THE QUEUE. LOCK-ITEMS                      19900070 T  0000:0
              ARE IN THE PRT AND HAVE THE FOLLOWING FORMAT:                             19900080 T  0000:0
               [1:1]=1, MEANS LOCKED(LOCK BIT,ORIGINAL ONLY)                            19900090 T  0000:0
               [2:1]=1, IN CONTROL(CONTROL BIT)                                         19900100 T  0000:0
               [3:1]=1, ORIGINAL LOCK-ITEM(ORIGINAL BIT)                                19900110 T  0000:0
                    =0, A COPY                                                          19900120 T  0000:0
               [4:1]= QUEUE INTERLOCK(ORIGINAL ONLY)                                    19900130 T  0000:0
               [8:10]=MIX INDEX OF PROGRAM IN CONTROL(ORIGINAL)                         19900140 T  0000:0
                     =RELATIVE PRT ADDRESS USED TO LINK ALL LOCK-ITEMS                  19900150 T  0000:0
                      IN CONTROL OR IN WAIT QUEUES(COPY)                                19900160 T  0000:0
               [18:15]=POINTER TO NEXT PROCESS IN WAIT QUEUE, ELSE 0                    19900170 T  0000:0
               [33:15]=POINTER TO HEAD OF QUEUE(ORIGINAL)                               19900180 T  0000:0
                      =POINTER TO ORIGINAL LOCK-ITEM(COPY)                              19900190 T  0000:0
              "LOCKPTR" IS THE PARAMETER PASSED AND HAS THE FORMAT:                     19900200 T  0000:0
               [1:1]=0, MEANS LOCK, ELSE UNLOCK                                         19900210 T  0000:0
               [2:1]=1,   "   TEST LOCK BIT, LOCK IF UNLOCKED AND                      19900220 T  0000:0
                        RETURN A 0, ELSE RETURN 1                                       19900230 T  0000:0
               [33:15]=RELATIVE PRT ADDRESS OF LOCK-ITEM;                               19900240 T  0000:0
    REAL LOCKPTR=-4;%PARAMETER                                                          19900250 T  0000:0
STACK(F-4) = LOCKPTR
              REAL Q,R,S,T,U,V;                                                         19900260 T  0000:0
STACK(F+1) = Q
STACK(F+2) = R
STACK(F+3) = S
STACK(F+4) = T
STACK(F+5) = U
STACK(F+6) = V
              ARRAY A[*];                                                               19900270 T  0000:0
STACK(F+7) = A
              DEFINE DSED=TERMSET(P1MIX)#, IMASK=@200000000000000#;                     19900280 T  0000:0
              SUBROUTINE LINKIT;                                                        19900290 T  0000:0
              BEGIN IF (V:=A[5])=0 THEN A[5]:=LOCKPTR INX 0                             19900300 T  0001:0
                    ELSE BEGIN WHILE PRT[P1MIX,V].[8:10] NEQ 0 DO                       19900310 T  0003:3
                               V:=PRT[P1MIX,V].[8:10];                                  19900320 T  0007:3
                               PRT[P1MIX,V].[8:10]:=LOCKPTR INX 0;                      19900330 T  0010:1
                         END;                                                           19900340 T  0013:3
                                                                                                     19900310
              END;                                                                      19900360 T  0013:3
                                                                                                     19900300
                 Q:=(PRT[P1MIX,LOCKPTR INX 0]] INX 0;                                   19900370 T  0014:0
                 R←NFLAG(M[U+Q]);                                                       19900380 T  0018:1
                 S←IF R.[3:1] THEN Q ELSE (R INX 0); %ADDR OF ORIGINAL                  19900390 T  0020:2
                 A:=PRT[P1MIX,TSX];%TASK ARRAY                                          19900395 T  0023:3
                 IF NOT M[S].[4:1] THEN SLEEP([M[S]],IMASK);                            19900400 T  0025:1
                 M[S].[4:1]:=0;                                                         19900410 T  0029:2
                 IF LOCKPTR.[2:1] THEN %TEST & LOCK                                     19900420 T  0032:1
                 BEGIN IF NOT M[S].[1:1] THEN %UNLOCKED                                 19900430 T  0033:0
                       BEGIN M[S]:=NABS(M[S])&U[CTC]&P1MIX[8:38:10];                    19900440 T  0035:1
                             M[U]:=(M[U] OR M)&O[CTF];                                  19900450 T  0039:3
```

```
                IF U≠S THEN BEGIN M[U].[8:10]←0;                                19900455 T  0043:0
                                  LINKIT;                                       19900460 T  0047:0
                             END;                                               19900465 T  0048:0
                                                                                             19900455
              LOCKPTR:=0;                                                       19900470 T  0048:0
        END ELSE LOCKPTR:=1;                                                    19900480 T  0048:3
                                                                                             19900440
M[S]:=(*P(DUP)) OR !MASK;                                                       19900490 T  0051:3
P(X,T);                                                                         19900500 T  0054:0
END;                                                                            19900510 T  0054:1
                                                                                             19900430
IF LOCKPTR GTR 0 THEN%LOCK                                                      19900520 T  0054:1
IF NOT M[U].[2:1] THEN%NOT IN CONTROL                                           19900530 T  0055:0
BEGIN IF NOT M[S].[1:1] THEN                                                    19900540 T  0057:1
      BEGIN M[S]:=NABS(M[S])&U[CTC]&P1MIX[8:38:10];                             19900550 T  0059:2
            M[U]:=((*P(DUP)) OR M)&O[CTF];                                      19900560 T  0064:0
            IF U≠S THEN BEGIN M[U].[8:10]←0;                                    19900565 T  0066:3
                              LINKIT;                                           19900570 T  0070:3
                         END;                                                   19900575 T  0072:0
                                                                                             19900565
      END ELSE                                                                  19900580 T  0072:0
                                                                                             19900550
      BEGIN                                                                     19900590 T  0072:0
      T:=M[S] !NX 0;                                                            19900600 T  0074:0
      WHILE M[T].[FF] NEQ 0 DO T:=M[T].[FF];                                    19900610 T  0076:0
      M[T].[FF]:=U;                                                             19900620 T  0081:0
      M[U].[FF]:=0;                                                             19900630 T  0083:1
      IF U≠S THEN BEGIN M[U].[8:10]←0; LINKIT END;                              19900650 T  0085:2
                                                                                             19900650
      M[S]:=(*P(DUP)) OR !MASK;                                                 19900660 T  0091:0
                                                                                             19900650
      COMPLEXSLEEP(DSED OR M[U].[2:1]);                                         19900670 T  0093:1
19799070    ACCIDENTAL ENTRY AT 1
      IF M[U].[2:1] THEN                                                        19900675 T  0101:1
      M[S]←((*P(DUP))&P1MIX[8:38:10]) OR !MASK;                                 19900680 T  0102:3
      P(XIT);                                                                   19900690 T  0106:2
      END;                                                                      19900700 T  0106:3
                                                                                             19900590
  END ELSE ELSE %UNLOCK                                                         19900710 T  0106:3
                                                                                             19900540
  BEGIN IF M[S].[1:1] THEN%LOCKED                                               19900720 T  0109:0
        BEGIN M[T:=M[S] !NX 0].[2:1]:=0;%TURN OFF CONTROL                       19900730 T  0111:0
              IF T≠S THEN                                                       19900735 T  0116:0
              BEGIN                                                             19900740 T  0116:3
              A:=PRT[V:=M[S].[8:10].TSX];                                       19900745 T  0117:1
              R:=A[5];                                                          19900750 T  0120:2
              IF T NEQ ([PRT[V,R]] !NX 0) THEN                                  19900755 T  0121:2
              BEGIN                                                             19900758 T  0123:2
              WHILE M[S].[CF] NEQ ([PRT[V,R]] !NX 0) DO                         19900760 T  0124:0
              BEGIN U:=R;                                                       19900770 T  0127:3
                    R:=PRT[V,R].[8:10];                                         19900780 T  0128:2
              END;                                                              19900790 T  0130:2
                                                                                             19900770
              PRT[V,U].[8:10]:=PRT[V,R].[8:10];%DELINK                          19900800 T  0131:0
              END  ELSE A[5]:=M[T].[8:10];                                      19900805 T  0135:1
                                                                                             19900758
              END;                                                              19900810 T  0138:1
                                                                                             19900740
```

```
                M[S],[CF]:=(T:=M[T],[FF]);                                  19900815 T  0138:1
                IF T NEQ 0 THEN                                             19900820 T  0142:1
                BEGIN M[T]←(*P(DUP)) OR M; P(XIT) END                       19900830 T  0143:0
                                                                                        19900830
                ELSE M[S]:=ABS(M[S]);                                       19900840 T  0146:0
            END;                                                            19900850 T  0149:0
                                                                                        19900730
    END;                                                                    19900855 T  0149:0
                                                                                        19900720
    M[S]:=(*P(DUP)) OR IMASK;                                               19900860 T  0149:0
END;                                                                        19900870 T  0151:1
                                                                                        19900010
                                                                                SIZE= 0153 WORDS
```

```
                PROCEDURE EVENTANDINTERRUPT;                                                    19900900 T  0000:0
                                                                          START OF REL SEGMENT: DISK ADDRESS = 00577
                BEGIN                                                                           19901000 T  0000:0
                    REAL TYPE=-4,       % TYPE: 1=ATTACH INTERRUPT (AT REL,ADDR RELINT)      19901100 T  0000:0
STACK(F-4) = TYPE
                         RELINT=-5,     %          TO EVENT (AT ABSOLUTE ADDR ABSEVT)       19901200 T  0000:0
STACK(F-5) = RELINT
                         ABSEVT=-6;     %       2=DETACH INTERRUPT (AT REL,ADDR RELINT)     19901300 T  0000:0
STACK(F-6) = ABSEVT
                                        %       3=CAUSE EVENT (AT ABSOLUTE ADDR ABSEVT)     19901400 T  0000:0
                         REAL K,T,A,SIZE,MIX,J,I,ABSOLD=J;                                      19901500 T  0000:0
STACK(F+1) = K
STACK(F+2) = T
STACK(F+3) = A
STACK(F+4) = SIZE
STACK(F+5) = MIX
STACK(F+6) = J
STACK(F+7) = I
STACK(F+6) = ABSOLD
                         LABEL ATTACHL,DETACHL,CAUSEL,ON,L1,L2,L3,L4,DONE;                      19901600 T  0000:0
                         SWITCH S ← ATTACHL,DETACHL,CAUSEL;                                     19901700 T  0000:0
                         ARRAY SFINTQ[*],TSKA[*];                                               19901800 T  0000:0
STACK(F+10) = SFINTQ
STACK(F+11) = TSKA
                         NAME BIGGERQ;                                                          19901840 T  0000:0
STACK(F+12) = BIGGERQ
                    DEFINE IMASK = @2000000000000000#,EMASK = @2000000000000000#;           19901850 T  0000:0
                SUBROUTINE DETACHINT;                                                           19901900 T  0000:0
                BEGIN  IF (ABSOLD←PRT[P1MIX,RELINT],[FF])≠0 THEN                                19902000 T  0001:0
                           BEGIN     WHILE NOT M[ABSOLD],[5:1] DO                               19902100 T  0003:2
                                         ABSOLD ← M[ABSOLD],[FF];                               19902120 T  0006:1
                                     IF M[ABSOLD]≥0 THEN SLEEP([M[ABSOLD]],EMASK);              19902130 T  0008:3
                                     M[ABSOLD] ← P(DUP,LOD,SSP);                                19902140 T  0012:3
                                     K ← T ← PRT[P1MIX,RELINT],[FF];                            19902150 T  0014:3
                                     A ←[PRT[P1MIX,RELINT]] INX 0;                              19902190 T  0017:1
                                     WHILE M[T],[FF]≠A DO T ← M[T],[FF];                        19902200 T  0019:1
                                     M[T],[FF] ← IF T=K THEN 0 ELSE K;                          19902300 T  0026:0
                                     PRT[P1MIX,RELINT],[FF] ← 0;                                19902350 T  0030:1
                                     M[ABSOLD] ← P(DUP,LOD,SSN);                                19902360 T  0032:3
                           END;                                                                 19902400 T  0034:3
                                                                                                        19902100
                END DETACHINT;                                                                  19902500 T  0034:3
                                                                                                        19902000
                                % FORMAT OF INTERRUPT (IN PRT):                                 19902501 T  0035:0
                                %    UPPER WORD (LINK WORD):                                    19902502 T  0035:0
                                %         [1:1]=1 IFF INTERRUPT IS DISALLOWED                   19902503 T  0035:0
                                %         [FF]: ABSOLUTE ADDRESS OF NEXT INTERRUPT ON           19902504 T  0035:0
                                %               EVENTS ATTACH LIST OR OF THE EVENT IF           19902505 T  0035:0
                                %               THIS INTERRUPT IS THE LAST ON LIST              19902506 T  0035:0
                                %         [CF]: RELATIVE PRT ADDRESS OF NEXT DECLARED           19902507 T  0035:0
                                %               INTERRUPT FOR THIS PROCESS                      19902508 T  0035:0
                                %    LOWER WORD: PROCEDURE DESCRIPTOR FOR INTERRUPT             19902509 T  0035:0
                                % FORMAT OF EVENT (IN PRT):                                     19902510 T  0035:0
                                %    "ORIGINAL" EVENT-ITEM (AT ABSOLUTE ADDR ABSEVT):           19902511 T  0035:0
                                %         [1:1]: EVENT INTERLOCK BIT (ON TO START)              19902512 T  0035:0
                                %         [5:1]=1 DISTINGUISHES THE EVENT FROM                  19902514 T  0035:0
                                %                 ATTACHED INTERRUPTS                           19902516 T  0035:0
```

```
                    %          [FF]: ABSOLUTE ADDRESS OF FIRST INTERRUPT          19902520 T  0035:0
                    %                ON ATTACH LIST                               19902522 T  0035:0
                    %          [47:1]: HAPPEN BIT                                 19902524 T  0035:0
                    %     "COPY" EVENT-ITEM (RECEIVED AS A PARAMETER):            19902526 T  0035:0
                    %          [CF]: ABSOLUTE ADDRESS OF ORIGINAL EVENT           19902527 T  0035:0
                    % CONTENTS OF TSKA[8]:                                        19902528 T  0035:0
                    %     [1:1]=1 IFF INTERRUPTER HAS JUST RUN AND               19902529 T  0035:0
                    %               SFINTQ IS NON-EMPTY                          19902530 T  0035:0
                    %     [2:1]=1 IFF SFINTQ IS NON-EMPTY                        19902540 T  0035:0
                    %     [3:1]=1 IFF INTERRUPTER IS RUNNING                     19902550 T  0035:0
                    %     [4:1]: SFINTQ INTERLOCK BIT (ON TO START)              19902560 T  0035:0
                    %     [FF] = ADDRESS OF OLD IRCW                             19902570 T  0035:0
                    %     [CF] = RELATIVE PRT ADDRESS OF FIRST IN LINKED         19902580 T  0035:0
                    %            LIST OF DECLARED INTERRUPTS                     19902593 T  0035:0
 % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % 19902600 T  0035:0
        GO TO S[TYPE-1];                                                         19902700 T  0035:0
ATTACHL: DETACHINT;     % AN ATTACH DOES AN IMPLICIT DETACH                     19902800 T  0040:2
        IF M[ABSEVT]≥0 THEN SLEEP([M[ABSEVT]],EMASK);                            19902850 T  0042:0
        M[ABSEVT] ← P(DUP,LOD,SSP);                                              19902860 T  0046:0
        IF (T←M[ABSEVT].[FF])=0 THEN T ← ABSEVT;                                 19902900 T  0048:0
        PRT[P1MIX,RELINT] ← PRT[P1MIX,RELINT]&T [CTF]&P1MIX [8:38:10];           19903100 T  0051:3
        M[ABSEVT] ← P(DUP,LOD,[PRT[P1MIX,RELINT]],CFX,SSN);                      19903200 T  0055:3
        P(XIT);                                                                  19903300 T  0059:0
DETACHL: DETACHINT; P(XIT);                                                      19903400 T  0059:1
CAUSEL:  M[ABSEVT].[47:1] ← 1;   %SET HAPPEN BIT: AWAKEN ALL YE WHO WAIT         19903500 T  0060:1
        IF M[ABSEVT].[FF]≠0 THEN% IF THERE ARE INTERRUPTS ATTACHED               19903600 T  0063:0
    BEGIN     IF M[ABSEVT]≥0 THEN SLEEP([M[ABSEVT]],EMASK);                      19903650 T  0065:0
        M[ABSEVT] ← P(DUP,LOD,SSP);                                              19903660 T  0069:2
        A ← M[ABSEVT].[FF];                                                      19903670 T  0071:2
        WHILE A≠ABSEVT DO  % INSERT ATTACHED INTERRUPTS IN THE                   19903700 T  0073:2
    BEGIN                  % RELEVANT SFINTQS                                    19903800 T  0074:3
            MIX ← (T←M[A]).[8:10];                                               19903810 T  0074:3
            IF TERMSET(MIX) THEN                                                 19903820 T  0077:1
            BEGIN IF T.[FF]≠ABSEVT THEN                                          19903825 T  0078:3
                  DO MIX ← (T←M[A←T.[FF]]).[8:10]                                19903830 T  0080:2
                  UNTIL NOTERMSET(MIX) OR T.[FF]=ABSEVT;                         19903850 T  0084:0
                  IF TERMSET(MIX) THEN                                           19903860 T  0088:0
                     BEGIN M[ABSEVT]←P(DUP,LOD,SSN); P(XIT);END;                 19903865 T  0089:2
                                                                                                 19903865
            END;                                                                 19903870 T  0092:1
                                                                                                 19903825
            TSKA ← PRT[MIX,TSX];                                                 19903900 T  0092:1
            IF NOT TSKA[8].[4:1] THEN SLEEP([TSKA[8]],IMASK);                    19903907 T  0093:3
            TSKA[8].[4:1] ← 0;                                                   19903908 T  0097:1
            SIZE ← (SFINTQ←PRT[MIX,SFINTX]).[8:10]-1;                            19903910 T  0099:3
            J ← K ← 0;                                                           19903915 T  0102:3
    IF NOT TSKA[8].[3:1] THEN% IF INTERRUPTER INTRINSIC NOT RUNNING              19903917 T  0104:0
    WHILE J≤SIZE DO        % COMPACT SFINTQ, PUSHING ALL NON-ZERO                19903920 T  0105:1
BEGIN                      % ENTRIES TOWARD THE FRONT OF THE ARRAY               19903930 T  0107:0
    IF SFINTQ[J]=0 THEN    % AND ZEROING OUT REMAINDER                           19903940 T  0107:0
        BEGIN                                                                    19903950 T  0108:0
            I ← IF K≠0 THEN K+2 ELSE J+1;                                        19903960 T  0108:2
    L1:     IF I>SIZE THEN GO DONE;                                              19903970 T  0112:1
            IF SFINTQ[I]=0 THEN BEGIN I ← I+1; GO TO L1; END;                    19903980 T  0113:2
                                                                                                 19903980
            K ← I; GO TO L3;                                                     19903990 T  0118:0
    L2:     IF K>SIZE THEN GO TO L4;                                             19904000 T  0119:1
```

```
                IF SFINTQ[K]≠0 THEN                                                    19904010 T  0120:2
L3:                  BEGIN    SFINTQ[J] ← SFINTQ[K];                                 19904020 T  0121:2
                             J ← J+1; K ← K+1; GO TO L2;                            19904030 T  0123:2
                     END;                                                           19904040 T  0126:2
                                                                                                  19904020
L4:             K ← K-1;                                                           19904050 T  0126:2
                FOR I ← J STEP 1 UNTIL K DO SFINTQ[I] ← 0;                         19904060 T  0127:3
           END ELSE J ← J+1;                                                       19904070 T  0132:2
                                                                                                  19903950
END;                                                                               19904100 T  0134:1
                                                                                                  19903930
DONE:      IF SFINTQ[SIZE]≠0 THEN   % QUEUE FULL--GET MORE SPACE                   19904300 T  0134:3
           IF SIZE+6>1023 THEN                                                     19904340 T  0135:3
      BEGIN  TERMINATE(MIX&103[CTF]);                                              19904350 T  0137:2
             TSKA[8] ← *P(DUP) OR IMASK; A ← T.[FF];GO ON;                         19904360 T  0139:1
      END ELSE                                                                     19904370 T  0144:0
                                                                                                  19904350
      BEGIN  PRT[MIX,SFINTX] ← BIGGERQ +FLAG(1&[PRT[MIX,SFINTX]]                   19904400 T  0144:0
                    [CTF]&(SIZE+6) [TOSIZE]);                                      19904450 T  0146:2
             MAKEPRESENT([I] INX 3);%GETS SPACE AND ZEROS IT OUT                   19904600 T  0149:3
             M[BIGGERQ INX NOT 1],[9:6] ← MIX;                                     19904650 T  0151:0
             MOVE(SIZE+1,SFINTQ,BIGGERQ);                                          19904700 T  0154:2
             FORGETSPACE(SFINTQ INX 0);                                            19904850 T  0156:3
             SFINTQ ← BIGGERQ;                                                     19904860 T  0158:1
      END;                                                                         19904900 T  0159:0
                                                                                                  19904400
           K ← 0; WHILE SFINTQ[K]≠0 DO K ← K+1;                                    19905000 T  0159:0
           SFINTQ[K] ← A-1; % ABSOLUTE ADDRESS OF INTERRUPT PD                     19905100 T  0163:0
           A ← T.[FF];                                                             19905200 T  0164:3
           TSKA[8] ← *P(DUP) OR #1200000000000000;                                 19905300 T  0166:0
           IF MIX=P2MIX THEN                                                       19905310 T  0168:0
                BEGIN  HALT; NOPROCESSTOG ← NOPROCESSTOG-1;                        19905320 T  0168:3
                END;                                                               19905330 T  0171:0
                                                                                                  19905320
           ON;                                                                     19905340 T  0171:0
           END;                                                                    19905350 T  0171:0
                                                                                                  19903800
           M[ABSEVT] ← P(DUP,LOD,SSN);                                             19905360 T  0173:0
      END;                                                                         19906100 T  0175:0
                                                                                                  19903650
END EVENTANDINTERRUPT;                                                             19906300 T  0175:0
                                                                                                  19901000
                                                                                        SIZE= 0176 WORDS
```

```
                % THE FORMAT OF SEGMENT ZERO OF PROGRAMS%                                    20000000 T  0000:0
                %       S[0]            =   LOCATION OF SEGMENT DICTIONARY%                 20001000 T  0000:0
                %       S[1]            =   SIZE OF SEGMENT DICTIONARY%                     20002000 T  0000:0
                %       S[2]            =   LOCATION OF PRT%                                20003000 T  0000:0
                %       S[3]            =   SIZE OF PRT%                                    20004000 T  0000:0
                %       S[4]            =   LOCATION OF FILE PARAMETER BLOCK%               20005000 T  0000:0
                %       S[5]            =   SIZE OF FILE PARAMETER BLOCK%                   20006000 T  0000:0
                %       S[6].[1:1]      =   1 FOR NEW FORMAT SEGMENT 0, ELSE 0              20006500 T  0000:0
                %       S[6]            =   STARTING SEGMENT NUMBER%                        20007000 T  0000:0
                %       S[7].[2:1]      =   FORTRAN FAULT FLAG                              20007100 T  0000:0
                %       S[7].[33:15]    =   NUMBER OF FILES%                                20008000 T  0000:0
                %       S[7].[18:15]    =   CORE REQUIREMENT / 64%                          20009000 T  0000:0
                %       IF S[2] < 0 THEN THE JOB WAS COMPILED BY COBOL%                     20010000 T  0000:0
                %       S[15]           =   DISK ADDRESS OF LABEL EQUATION ENTRIES          20010100 T  0000:0
                %                           PRESENTED WHEN PROGRAM WAS COMPILED AND         20010200 T  0000:0
                %                           APPLICABLE TO ALL EXECUTIONS                    20010300 T  0000:0
                %       S[16]           =   ESTIMATED PROCESSOR TIME   (FROM COMPILATN)     20010400 T  0000:0
                %       S[17]           =   ESTIMATED I/O TIME         (FROM COMPILATN)     20010500 T  0000:0
                %       S[18]           =   PRIORITY                   (FROM COMPILATN)     20010600 T  0000:0
                %       S[19]           =   COMMON VALUE               (FROM COMPILATN)     20010700 T  0000:0
                %       S[20]           =   ESTIMATED CORE REQUIREMENTS(FROM COMPILATN)     20010800 T  0000:0
                %       S[21]           =   STACK SIZE                 (FROM COMPILATN)     20010900 T  0000:0
                                                                                           20011000 T  0000:0
                                                                                           20011100 T  0000:0
                                                                                           20011200 T  0000:0
                PROCEDURE SELECTRUN1;                                  START OF REL SEGMENT; DISK ADDRESS = 00583
PRT(644) = SELECTRUN1
                BEGIN                                                                      20011300 T  0000:0
                                                                                           20011400 T  0000:0
                        REAL    MSCW        =  -2,                                         20011500 T  0000:0
                                MYMSCW      =  -1,                                         20011600 T  0000:0
                                F           =  -1,                                         20011700 T  0000:0
                                RCW         =  +0,                                         20011800 T  0000:0
                                I           =  +1,                                         20011900 T  0000:0
                                T           =  +2,                                         20012000 T  0000:0
                                L           =  +3,                                         20012100 T  0000:0
                                DT          =  +4,                                         20012200 T  0000:0
                                MIX         =  +5,                                         20012300 T  0000:0
                                HDR         =  +6,                                         20012400 T  0000:0
                                LEVEL       =  +7,                                         20012500 T  0000:0
                                MCPJOB      =  +8,                                         20012600 T  0000:0
                                OLAYDISK    =  +9,                                         20012700 T  0000:0
                                THISLINK    =  +10,                                        20012800 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = F
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = I
STACK(F+2) = T
STACK(F+3) = L
STACK(F+4) = DT
STACK(F+5) = MIX
STACK(F+6) = HDR
STACK(F+7) = LEVEL
STACK(F+10) = MCPJOB
STACK(F+11) = OLAYDISK
STACK(F+12) = THISLINK
```

```
                                                                                20012900 T  000010
STACK(F+13) = NEXTLINK          NEXTLINK      =  +11,                           20013000 T  000010
STACK(F+14) = PREVLINK          PREVLINK      =  +12,                           20013100 T  000010
STACK(F+15) = TYPE              TYPE          =  +13,                           20013200 T  000010
STACK(F+16) = STACKLOC          STACKLOC      =  +14,                           20013300 T  000010
STACK(F+17) = SHEETLOCKED       SHEETLOCKED   =  +15;                          20013400 T  000010
                                                                                20013500 T  000010
                          ARRAY S             =  +16[*],
STACK(F+20) = S                                                                 20013600 T  000010
STACK(F+21) = SEGO              SEGO          =  +17[*],                        20013700 T  000010
STACK(F+22) = TRP               TRP           =  +18[*],                        20013800 T  000010
STACK(F+23) = LBL               LBL           =  +19[*],                        20013900 T  000010
PRT(161) = SD                   SD            =  NT2[*],                        20014000 T  000010
PRT(161) = TSKA                 TSKA          =  NT2[*];                        20014100 T  000010
                                                                                20014300 T  000010
                          NAME  ADDR          =  LBL +1;
STACK(F+24) = ADDR                                                              20014400 T  000010
                          REAL  PASSLEVEL     =  ADDR + 1,
STACK(F+25) = PASSLEVEL                                                         20014500 T  000010
STACK(F+25) = SVALUE            SVALUE        =  PASSLEVEL,                     20014600 T  000010
STACK(F+26) = RETURNMSCW        RETURNMSCW    =  PASSLEVEL + 1,                 20014700 T  000010
STACK(F+27) = RETURNRCW         RETURNRCW     =  RETURNMSCW + 1;                20014800 T  000010
                                                                                20014900 T  000010
                                                                                20015000 T  000010
                    DEFINE SHEETMAX = MIXMAX#;                                  20016100 T  000010
                                                                                20016200 T  000010
                    %%%%                ***NOTE****                             20016300 T  000010
                    %%%% THE VARIABLES DECLARED ABOVE MUST CORRESPOND EXACTLY TO 20016400 T  000010
                    %%%% THOSE DECLARED IN PROCEDURE SELECTRUN.                  20016500 T  000010
                                                                                20016600 T  000010
                    REAL  EUVAL         =  RETURNRCW + 1,
STACK(F+30) = EUVAL                                                             20016700 T  000010
                          FBADRS        =  EUVAL     + 1,
STACK(F+31) = FBADRS                                                            20016800 T  000010
                          FPBVERSION    =  FBADRS    + 1,
STACK(F+32) = FPBVERSION                                                        20016900 T  000010
                          FT            =  FPBVERSION+ 1,
STACK(F+33) = FT                                                                20017000 T  000010
                          LINDX         =  FT        + 1,
STACK(F+34) = LINDX                                                             20017100 T  000010
                          LINK          =  LINDX     + 1,
STACK(F+35) = LINK                                                              20017200 T  000010
                          SENSEVAL      =  LINK      + 1,
STACK(F+36) = SENSEVAL                                                          20017300 T  000010
                          SPDVAL        =  SENSEVAL  + 1,
STACK(F+37) = SPDVAL
```

```
                    S2          = SPDVAL    + 1,                                    20017400 T  0000:0
STACK(F+40) = S2
                    FB          = S2        + 1,                                    20017500 T  0000:0
STACK(F+41) = FB
                    FPB         = FB        + 1;                                    20017600 T  0000:0
STACK(F+42) = FPB
                                                                                    20017700 T  0000:0
              REAL  FT1         = NT1,                                              20017800 T  0000:0
PRT(160) = FT1
                    TYPEDISK    = NT3;                                              20017900 T  0000:0
PRT(162) = TYPEDISK
                                                                                    20018000 T  0000:0
              COMMENT THE VALUE OF "TYPE" DETERMINES WHICH PORTIONS OF              20018100 T  0000:0
              THIS PROCEDURE WILL BE EXECUTED. THIS PROCEDURE CAN ALSO              20018200 T  0000:0
              DETERMINE WHICH PORTIONS OF PROCEDURE "SELECTRUN" WILL BE             20018300 T  0000:0
              EXECUTED BY ASSIGNING A NEGATIVE VALUE TO "TYPE" BEFORE               20018400 T  0000:0
              RETURNING TO THAT PROCEDURE.                                          20018500 T  0000:0
              END OF COMMENT;                                                       20018600 T  0000:0
                                                                                    20018700 T  0000:0
              DEFINE STARTING     = 1#,                                             20018800 T  0000:0
                     CONTINUEING  = 2#,                                             20018900 T  0000:0
                     QUITTING     = 3#,                                             20019000 T  0000:0
                     RUNING       = 4#,                                             20019100 T  0000:0
                     PASSING      = 5#,                                             20019200 T  0000:0
                     EQUATING     = 6#;                                             20019300 T  0000:0
                                                                                    20019400 T  0000:0
              DEFINE XCLOCKTIME =                                                   20019500 T  0000:0
                  (((NT2:=(XCLOCK DIV 3600)) MOD 60 + (NT2 DIV 60)×100 +            20019600 T  0000:0
                   0.5 ) DIV 1)#;                                                   20019700 T  0000:0
                                                                                    20019800 T  0000:0
              DEFINE ACTUALDISKADDRESS(ACTUALDISKADDRESS1) =                        20019900 T  0000:0
                  ((JAR[MIX,((NT4:=ACTUALDISKADDRESS1) DIV (NT3:=JAR[MIX,8]))+10]   20020000 T  0000:0
                   + (NT4 MOD NT3) + 0.5) DIV 1)#;                                  20020100 T  0000:0
                                                                                    20020110 T  0000:0
            $ SET OMIT = NOT(PACKETS)                                               20020119 T  0000:0
              DEFINE UNITNO = S[23].[2:6]#; % ORIGINATING UNIT                      20020120 T  0000:0
            $ POP OMIT                                                              20020121 T  0000:0
                                                                                    20020200 T  0000:0
              LABEL CONTINUE, DLX, EXIT, LEM, RMSG, UNBLK, STOP;                    20020300 T  0000:0
                                                                                    20020400 T  0000:0
              SUBROUTINE DELINK;                                                    20020500 T  0000:0
              % DELINKS THE SHEET ENTRY AND RETURNS SHEET DISK SPACE                 20020600 T  0001:0
                  BEGIN                                                             20020700 T  0001:0
                  STREAM(A:=S[3].[8:10],B:=P(.SCHEDULEIDS));                        20020800 T  0001:0
                      BEGIN % MARK SCHEDULE SLOT "OPEN"                             20020900 T  0002:3
                      SKIP A DB; DS:=RESET;                                         20021000 T  0002:3
                      END;                                                          20021100 T  0003:2
                                                                                                20020900
                  IF F = 0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER               20021200 T  0003:3
                      BEGIN                                                         20021300 T  0004:2
                      IF NEXTLINK=0 THEN SHEET[LEVEL].[FF]:=PREVLINK;               20021400 T  0005:0
                      IF PREVLINK=0 THEN                                            20021500 T  0008:1
                          BEGIN                                                     20021600 T  0009:0
                          SHEET[LEVEL].[CF]:=NEXTLINK; GO DLX;                      20021700 T  0009:2
                          END;                                                      20021800 T  0012:0
                                                                                                20021600
                      IF LBL=0 THEN                                                 20021900 T  0012:0
```

```
                BEGIN                                                                   20021910 T  0013:0
                M[(LBL:=[M[SPACE(30)]]&30[8:38:10]) INX NOT 1],[9:6]:=0;                 20021920 T  0013:2
                END;                                                                    20021930 T  0020:2
                                                                                                    20021910
                DISKWAIT(-(LBL INX 0), 30, PREVLINK);                                   20022000 T  0020:2
                LBL[29]:=NEXTLINK;                                                      20022100 T  0022:3
                DISKWAIT( (LBL INX 0), 30, PREVLINK);                                   20022200 T  0024:0
DLX:            FORGETSPDISK(THISLINK);                                                 20022300 T  0026:0
                END; % IF SHEET ENTRY NOT A PARAMETER                                   20022400 T  0026:3
                                                                                                    20021300
            END DELINK;                                                                 20022500 T  0026:3
                                                                                                    20020700
                                                                                        20022600 T  0027:0
        P(MYMSCW, STF);                                                                 20022700 T  0027:0
                                                                                        20022800 T  0027:3
        P(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0); % FOR VARIABLES LOCAL TO THIS               20022900 T  0027:3
                                            % PROCEDURE ONLY                           20023000 T  0030:2
                                                                                        20023100 T  0030:2
IF TYPE=CONTINUEING THEN GO TO CONTINUE;                                                20023200 T  0030:2
IF TYPE=STARTING THEN % SEARCH THE SHEET QUEUE TO FIND A CANDIDATE                      20023300 T  0031:3
                      % FOR SELECTION                                                   20023400 T  0032:2
    BEGIN                                                                               20023500 T  0032:2
    PASSLEVEL:=RESTARTING;                                                              20023800 T  0033:0
    COMMENT "PASSLEVEL" WILL BE NEGATIVE WHEN A JOB IS BEING RE-STARTED.                20023900 T  0033:3
    UNDER THIS CONDITION, THE TEST FOR "LEVEL GEQ PASSLEVEL" WILL                       20024000 T  0033:3
    FAIL AND NO OTHER JOBS WILL BE SELECTED UNTIL THE RE-START JOB                      20024100 T  0033:3
    HAS BEEN PROPERLY INITIATED.                                                        20024200 T  0033:3
    END OF COMMENT;                                                                     20024300 T  0033:3
    FOR LEVEL:=0 STEP 1 UNTIL SHEETMAX DO % FOR ALL "SHEET PRIORITIES"                  20024600 T  0033:3
        BEGIN                                                                           20024700 T  0035:0
        PREVLINK:=NEXTLINK:=0; % RESET FOR EACH "LEVEL"                                 20024800 T  0035:0
        % IF THERE IS AN ENTRY IN THE SHEET, SEE IF IT WILL FIT                        20024900 T  0036:1
        IF(THISLINK:=SHEET[LEVEL],[CF]) NEQ 0 THEN GO TO LEM;                           20025000 T  0036:1
                                                                                        20025100 T  0038:3
CONTINUE:                                                                               20025200 T  0038:3
                                                                                        20025300 T  0038:3
        % "NEXTLINK" OBTAINED FROM "SHEET[29]" BELOW                                   20025400 T  0038:3
        % IF THERE IS ANOTHER ENTRY AT THIS LEVEL, PROCESS IT NOW                      20025500 T  0038:3
        IF(THISLINK:=NEXTLINK) NEQ 0 THEN GO TO LEM;                                    20025600 T  0038:3
        END;                                                                            20025700 T  0040:2
                                                                                                    20024700
    TYPE := -QUITTING; % END OF SHEET SEARCH                                            20025800 T  0042:3
    GO TO EXIT;                                                                         20025900 T  0043:3
                                                                                        20026000 T  0044:1
LEM:                                                                                    20026100 T  0044:1
                                                                                        20026200 T  0044:1
    % AT THIS POINT, THERE IS A CANDIDATE FOR SELECTION                                20026300 T  0044:1
    IF S = 0 THEN % NO SHEET SPACE OBTAINED YET                                         20026400 T  0044:1
        BEGIN                                                                           20026500 T  0045:1
        S := [MFTYPEDSPACE(31,SHEETAREAV)]] & 30[SIZE];%            %167-               20026600 P  0045:3
        END;                                                                            20026700 T  0049:2
                                                                                                    20026500
                                                                                        20026800 T  0049:2
%  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .           20026900 T  0049:2
% READ SHEET ENTRY INTO CORE AT "S"                                                    20027000 T  0049:2
%  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .           20027100 T  0049:2
                                                                                        20027200 T  0049:2
```

```
        DISKWAIT(-(S INX 0), 30, THISLINK);                                                  20027300 T  0049:2
        NEXTLINK:=S[29]; % NEXT ENTRY IN SHEET QUEUE AT THIS LEVEL                           20027400 T  0051:3
                                                                                             20027500 T  0052:3
%  *****   ***   *      *****     *   *  ****   *****                                       20027600 T  0052:3
%  *        *    *      *         *   *  *   *  *   *                                       20027700 T  0052:3
%  ***      *    *      *****     *****  *   *  *****                                       20027800 T  0052:3
%  *        *    *      *         *   *  *   *  *  *                                        20027900 T  0052:3
%  *       ***   *****  *****     *   *  *   *  *   * 0                                    20028000 T  0052:3
                                                                                             20028100 T  0052:3
        HDR:=GETSPACE(30+(S[0]<0),DISKHEADERAREAV,1)+2; % S[0]<0 COMPILE                     20028300 P  0052:3
        % THE EXTRA WORD IS FOR COMPILATIONS (JAR[30]=FID OF OBJECT FILE)                    20028400 T  0056:1
        DISKWAIT(-HDR, 30, S[25]); % READ FILE HEADER INTO CORE AT "HDR"                     20028900 T  0056:1
        GO TO EXIT;                                                                          20029000 T  0058:0
        END; % IF TYPE = STARTING OR CONTINUEING                                             20029100 T  0058:2
                                                                                                         20023500
                                                                                             20029200 T  0058:2
IF TYPE=PASSING THEN % PASS THIS ENTRY WITHOUT DELINKING                                     20029300 T  0058:2
        BEGIN                                                                                20029400 T  0059:1
                                                                                             20029500 T  0059:3
%   *****  *****  *****  *****                                                              20029600 T  0059:3
%   *   *  *   *  *      *                                                                  20029700 T  0059:3
%   *****  *****  *****  *****                                                              20029800 T  0059:3
%   *      *   *      *      *                                                              20029900 T  0059:3
%   *      *   *  *****  *****                                                              20030000 T  0059:3
                                                                                             20030100 T  0059:3
        IF (I:=S[2]<0) OR S[3]>0 THEN       % XS/ES OR FIRST TIME THROUGH                     20030200 T  0059:3
            BEGIN                                                                            20030300 T  0062:2
            S[2]:=ABS(S[2]);  % MARK IT NOT XS-ED OR ES-ED.                                 20030350 T  0063:0
            S[3]:=NABS(S[3]); % MARK IT SCHEDULED                                          20030400 T  0064:3
            IF F=0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER                                20030500 T  0066:2
            % WRITE THE SHEET ENTRY BACK OUT WITH S[3] "MARKED"                             20030600 T  0067:1
            DISKWAIT((S INX 0), 30, THISLINK);                                               20030700 T  0067:1
            IF SCHEDMSG OR I OR (S[23].[9:4] NEQ 0) THEN                    %166-            20030760 P  0069:3
            BEGIN                                                                            20030780 T  0072:3
            STREAM(I, L, C:=LEVEL, A:=S[*], ID:=S[3].[8:10],                                 20030800 T  0073:1
$ SET OMIT = NOT(DCSPO AND DATACOM)                                                          20031000 T  0075:3
                Q:=XCLOCKTIME, W:=S[20]*64, B:=HDR);                                         20031500 T  0075:3
                BEGIN                                                                        20031600 T  0081:2
                SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL;           % PRIORITY              20031700 T  0081:2
                DI:=B; DI:=DI+6; DS:="!";                                                    20031800 T  0082:2
                SI:=A; SI:=SI+1; DS:=7CHR;                          % MFID                   20031900 T  0083:2
                SI:=SI+1; DS:="/"; DS:=7CHR;                        % FID                    20032000 T  0084:1
                DS:="="; SI:=LOC ID; DS:=2DEC;                      % SCH.NO.                20032100 T  0085:1
                CI:=CI+1; GO TO SCHD;                                                        20032150 T  0086:1
                DS:=10 LIT" NOT XS-ED"; GO TO REASON;                                        20032200 T  0087:0
   SCHD:        DS:=11 LIT" SCHEDULED "; SI:=LOC Q; DS:=4 DEC;      % TIME                  20032250 T  0088:3
$ SET OMIT = NOT(DCSPO AND DATACOM)                                                          20032400 T  0091:0
   REASON:      DS:=2 LIT", ";                                                               20032725 T  0091:0
                CI:=CI+L; GO TO L0; GO TO L1;                                                20032750 T  0091:2
$ SET OMIT = NOT BREAKOUT                                                                    20032775 T  0092:2
   L2:          DS:=14 LIT"TOO MANY JOBS-";  GO TO EXIT;                                     20032875 T  0092:2
   L1:          DS:=13 LIT"NO OLAY DISK-"; GO TO EXIT;                                       20032900 T  0094:3
   L0:          DS:= 5 LIT"NEEDS"; SI:=LOC W; DS:=6 DEC; DS:=LIT"-";                         20032925 T  0097:0
                DI:=DI-7; DS:=5 FILL;                                                        20032930 T  0099:0
   EXIT:                                                                                     20032950 T  0099:2
                END STREAM;                                                                  20033000 T  0099:2
                                                                                                         20031600
```

```
$ SET OMIT = NOT( DATACOM )                                                                    20033200 T  0099:3
      SPOUTER(HDR,UNITNO,SCHEDMSG OR I);                                                       20034000 T  0099:3
      END   % IF SCHEDULE MESSAGE IS SPOUTED                                                   20034050 T  0102:3
                                                                                                          20030780
      ELSE FORGETSPACE(HDR);                                                        %166-      20034060 C  0102:3
      END   % IF XS/ES OR FIRST TIME                                                           20034100 T  0106:3
                                                                                                          20030300
   ELSE FORGETSPACE(HDR);                                                                      20034200 T  0106:3
   IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER                                         20034300 T  0108:0
      BEGIN                                                                                    20034400 T  0108:3
      DISKWAIT(F,[CF],30,T:=GETESPDISK); % WRITE SHEET ENTRY TO DISK                           20034500 T  0109:1
      FORGETSPACE(S[7]); % CORE ADDRESS OF SEGMENT ZERO IN S[7]                                20034600 T  0111:3
      IF SEG0=S[7] THEN SEG0:=0; % AVOID "DOUBLE "FORGETSPACE"                                 20034610 T  0112:3
      IF NOT SHEETLOCKED THEN                                                                  20034700 T  0115:1
         BEGIN                                                                                 20034800 T  0115:3
         SLEEP([TOGLE],SHEETMASK);                                                             20034900 T  0116:1
         LOCKTOG(SHEETMASK);                                                                   20035000 T  0117:3
                                                                                                          20035000
         SHEETLOCKED := 1;                                                                     20035100 T  0121:1
         END;                                                                                  20035200 T  0122:0
                                                                                                          20034800
      IF (L:=S[2],[CF]) GTR SHEETMAX THEN L:=SHEETMAX;                                         20035300 T  0122:0
      % SHEET[2],[CF] = "SHEET" PRIORITY                                                       20035400 T  0125:1
      IF SHEET[L],[CF] NEQ 0 THEN % SHEET QUEUE ALREADY EXISTS                                 20035500 T  0125:1
         BEGIN % LINK IN THIS ENTRY                                                            20035600 T  0126:3
         DISKWAIT(-F,[CF],30,I:=SHEET[L],[FF]); %TAIL OF QUEUE                                 20035700 T  0127:1
         S[29]:=T; % LINK TO THIS ENTRY                                                        20035800 T  0130:2
         DISKWAIT(F,[CF],30,I); % REPLACE ENTRY                                                20035900 T  0131:3
         END                                                                                   20036000 T  0133:2
                                                                                                          20035600
      ELSE SHEET[L]:=T; % ESTABLISH NEW SHEET QUEUE                                            20036100 T  0133:2
      SHEET[L].[FF]:=T; % LINK IN AT END OF QUEUE                                              20036200 T  0135:1
      TYPE := "QUITTING;                                                                       20036300 T  0137:1
      GO TO EXIT; % DONT PROCESS ANY MORE ENTRIES                                              20036400 T  0138:1
      END;                                                                                     20036500 T  0138:3
                                                                                                          20034400
   IF PASSLEVEL=1023 THEN PASSLEVEL:=LEVEL;                                                    20036800 T  0138:3
   PREVLINK:=THISLINK;                                                                         20037100 T  0140:3
   IF MIX LEQ MIXMAX THEN                                                                      20037200 T  0141:2
      BEGIN                                                                                    20037300 T  0142:1
      TYPE := "CONTINUEING;                                                                    20037400 T  0142:3
      GO TO CONTINUE;                                                                          20037500 T  0143:3
      END                                                                                      20037600 T  0144:1
                                                                                                          20037300
   ELSE                                                                                        20037700 T  0144:1
      BEGIN                                                                                    20037800 T  0144:1
      TYPE := "QUITTING;                                                                       20037900 T  0144:3
      GO TO EXIT;                                                                              20038000 T  0145:3
      END;                                                                                     20038100 T  0146:1
                                                                                                          20037800
   END; % IF TYPE = PASSING                                                                    20038200 T  0146:1
                                                                                                          20029400
                                                                                               20038300 T  0146:1
IF TYPE=RUNING THEN % SPECIAL HANDLING FOR "RUN" JOBS                                          20038500 T  0146:1
                                                                                               20038600 T  0147:0
%   *****  *   *  *    *         *  *****  ****   *****                                       20038700 T  0147:0
%   *   *  *   *  **   *         *  *   *  *   *  *                                           20038800 T  0147:0
%   *****  *   *  * *  *      *  *  *   *  ****   *****                                       20038900 T  0147:0
```

```
%   *  *   *   *  *  * *       *  *  *   *  *   *       *                    20039000 T  014:0
%   *   *  *****  *   **       ****  *****  ****   *****                     20039100 T  014:0
                                                                              20039200 T  014:0
        BEGIN                                                                 20039300 T  014:0
        IF S[2].[2:1] NEQ 1 THEN % S[2].[2:1]=1 WHEN ES-ED                    20039400 T  014:2
        FOR I:=1 STEP 1 UNTIL MIXMAX DO                                       20039500 T  014:0
        IF JAR[I,*] NEQ 0 THEN % JOB RUNNING AT THIS MIX INDEX                20039600 T  015:0
        IF (S[0] EQV JAR[I,0])=(NOT 0) AND                                    20039700 T  015:0
           (S[1] EQV JAR[I,1])=(NOT 0) AND                                    20039800 T  015:0
            PRYOR[I] GEQ 0 THEN                                               20039900 T  015:3
            BEGIN % JOB IS ALREADY RUNNING                                    20040000 T  015:0
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                         20040100 T  015:2
            IF BOJMESS THEN                                                   20043000 T  015:2
                BEGIN                                                         20043100 T  016:1
 $ SET OMIT = NOT (DCSPO AND DATACOM)                                         20043200 T  016:3
RMSG:               BEGIN                                                     20043600 T  016:3
                    STREAM(C:=S[18], A:=JARROW[I], I, % S[18]=PRIORITY        20043700 T  016:3
                          Q := XCLOCKTIME, B := HDR);                         20043800 T  016:1
                        BEGIN                                                 20043900 T  016:0
                        SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL; %PRIOR      20044000 T  016:0
                        DI:=B; DI:=DI+6; DS:=LIT":";                          20044100 T  016:0
                        SI:=A; SI:=SI+1; DS:=7CHR; DS:=LIT"/";    % MFID      20044200 T  016:0
                        SI:=SI+1; DS:=7CHR;                       % FID       20044300 T  017:1
                        SI:=LOC I; DS:=LIT"="; DS:=2DEC;          % MIX       20044400 T  017:3
                        DS:=9LIT" RUNNING ";                       %161-      20044500 P  017:3
                        DS:=4DEC; DS:=LIT"+"; DI:=DI-16; DS:=FILL;% TIME      20044600 T  017:1
                        END STREAM;                                           20044700 T  017:2
                                                                                        20043900
                    SPOUT(HDR&S[23][9:9:9]);                                  20044800 T  017:3
                    END % IF BOJ MESSAGE SHOULD BE SENT                       20044900 T  017:1
                                                                                        20043600
 $ SET OMIT = NOT (DCSPO AND DATACOM)                                         20045000 T  017:1
                END % IF BOJMESS                                              20045300 T  017:1
                                                                                        20043100
            ELSE FORGETSPACE(HDR);                                            20045400 T  017:1
            % BUMP OPEN COUNT BACK DOWN                                       20045500 T  018:3
            FORGETSPACE(DIRECTORYSEARCH( ABS(S[0]),                           20045600 T  018:3
                    IF S[0] LSS 0 THEN "DISK    " ELSE S[1], 13));            20045700 T  018:0
            FORGETESPDISK(S[6] INX 0); % CARD IMAGE FOR LOG                   20045800 T  018:2
            T:=S[13]; % SAVE LINK TO LABEL EQUATION CARDS                     20045900 T  018:0
            WHILE T NEQ 0 DO % FORGET LABEL EQUATION SEGMENTS                 20046000 T  018:0
                BEGIN                                                         20046100 T  018:1
                DISKWAIT(-(S INX 0), 30, T);                                  20046200 T  018:1
                FORGETESPDISK(T);                                             20046300 T  019:2
                T:=S[29];                                                     20046400 T  019:1
                END;                                                          20046500 T  019:1
                                                                                        20046100
            DELINK; % DELINK THE ENTRY FROM THE SHEET QUEUE                   20046600 T  019:0
            IF F=0 THEN % SHEET ENTRY NOT PASSED AS A PARAMETER               20046700 T  019:0
                BEGIN                                                         20046800 T  019:3
                TYPE := "CONTINUEING;                                         20046900 T  019:1
                GO TO CONTINUE;                                               20047000 T  019:1
                END                                                           20047100 T  019:3
                                                                                        20046800
            ELSE                                                              20047200 T  019:3
                BEGIN % SHEET ENTRY PASSED AS A PARAMETER, DONT CONTINUE      20047300 T  019:3
                TYPE := "QUITTING;                                            20047400 T  019:1
```

```
                GO TO EXIT;                                                                  20047500 T  0200:1
                END;                                                                         20047600 T  0200:3
                                                                                                         20047300
            END;                                                                             20047700 T  0200:3
                                                                                                         20040000
        END OF SPECIAL HANDLING OF RUN CARDS;                                                20047800 T  0203:0
                                                                                                         20039300
                                                                                             20048000 T  0203:0
IF TYPE = EQUATING THEN                                                                      20048100 T  0203:0
    BEGIN                                                                                    20048200 T  0203:3
                                                                                             20048300 T  0204:1
%   ******   *****    *****                                                                  20048400 T  0204:1
%   *        *    *   *    *                                                                 20048500 T  0204:1
%   ****     *****    *****                                                                  20048600 T  0204:1
%   *        *        *    *                                                                 20048700 T  0204:1
%   *     0  *     0  *****  0                                                               20048800 T  0204:1
                                                                                             20048900 T  0204:1
    FPB:=TYPEDSPACE(SEGO[5] INX 1,FPBAREAV);                                    %167-        20049000 P  0204:1
    % SEGO[5] = SIZE OF THE FILE PARAMETER BLOCK ON DISK                                     20049100 T  0207:1
    % SEGO[4] = RELATIVE DISK ADDRESS OF THE FILE PARAMETER BLOCK                           20049200 T  0207:1
    % SEGO[7] = NUMBER OF FILES IN THE F.P.B.                                               20049300 T  0207:1
    % ETRLNG  = NUMBER OF WORDS PER FILE USED IN THE F.P.B.                                 20049400 T  0207:1
    M[SEGO[5] INX FPB]:=0; % SET TO ZERO TO INSURE THAT STREAM STATEMENT                    20049500 T  0207:1
                           % USED TO BUILD "IN-CORE" FPB WILL NOT SKAN                      20049600 T  0209:2
                           % PAST THE END OF THE COMPILER GENERATED FPB.                    20049700 T  0209:2
    FB:=GETSPACE(SEGO[7],[CF]*ETRLNG,FPBAREAV,1)+2;                             %167-        20049800 P  0209:2
    % "FB" WILL BE "IN-CORE" FILE PARAMETER BLOCK LOCATION                                  20049900 T  0213:0
      DISKWAIT(-FPB, SEGO[5] INX 0, ACTUALDISKADDRESS(SEGO[4],[CF]));                        20050000 T  0213:0
                                                                                             20050100 T  0221:2
COMMENT FORMAT OF COMPILER GENERATED FPB:                                                    20050200 T  0221:2
     CHRS 1 AND 2      = FILE NUMBER (12 BIT BINARY) STARTING WITH 1                         20050300 T  0221:2
     CHR.  3           = FILE TYPE                                                           20050400 T  0221:2
     CHRS  4 THRU 10   = MFID                                                                20050500 T  0221:2
     CHRS 11 THRU 17   = FID                                                                 20050600 T  0221:2
     CHR  18           = LENGTH OF INTERNAL FILE NAME (6 BIT BINARY)                         20050700 T  0221:2
     CHRS 19 THRU N    = INTERNAL NAME                                                       20050800 T  0221:2
     FOR VERSION 1 ( VERSION NUMBER IN SEGO[5],[1:8] )                                       20050900 T  0221:2
     NEXT TWO CHARACTERS FOLLOWING INTERNAL NAME CONTAIN:                                    20051000 T  0221:2
        [40:1]          = SENSITIVE BIT                                                      20051100 T  0221:2
        [41:2]          = DISK SPEED (1=FAST, 2=SLOW, 0=USPECIFIED)                          20051200 T  0221:2
        [43:5]          = EU NUMBER + 1                                                      20051300 T  0221:2
                                                                                             20051400 T  0221:2
COMMENT FORMAT OF "IN-CORE" FPB ( 5 WORDS FOR EACH FILE ENTRY )                              20051500 T  0221:2
      WORD[0],[ 6:42]  = MFID                                                                20051600 T  0221:2
      WORD[1],[ 6:42]  = FID                                                                 20051700 T  0221:2
      WORD[2],[ 1:17]  = REEL NUMBER   (3 BCL DIGITS)                                        20051800 T  0221:2
      WORD[2],[18:30]  = CREATION DATE (5 BCL DIGITS)                                        20051900 T  0221:2
      WORD[3],[ 1:5 ]  = CYCLE NUMBER (BINARY)                                               20052000 T  0221:2
      WORD[3],[ 6:17]  = PRN (PHYSICAL REEL NUMBER) FOR NON-DISK FILES                       20052100 T  0221:2
      WORD[3],[15:1 ]  = SENSITIVE BIT (DISK FILES ONLY)                                     20052200 T  0221:2
      WORD[3],[16:2 ]  = DISK SPEED    (DISK FILES ONLY)                                     20052300 T  0221:2
      WORD[3],[18:5 ]  = EU. NUMBER+1  (DISK FILES ONLY)                                     20052400 T  0221:2
      WORD[3],[23:1 ]  = IO CODE (INPUT=0,OUTPUT=1)                                          20052500 T  0221:2
      WORD[3],[24:12]  = NUMBER OF ERRORS                                                    20052600 T  0221:2
      WORD[3],[36:6 ]  = LOGICAL UNIT NUMBER + 1                                             20052700 T  0221:2
      WORD[3],[43:5 ]  = UNIT TYPE                                                           20052800 T  0221:2
END OF COMMENT;                                                                              20052900 T  0221:2
```

```
      FPBVERSION:=SEG0[5].[1:8]; % NEWER VRSN,CONTAINS EU,SPD,ETC.                    20053000 T  0221:2
      STREAM(TOG:=(FPBVERSION=1),T1:=0,T2:=0,C:=0,FPB,FB);                           20053100 T  0221:2
         BEGIN                                                                       20053200 T  0223:0
         SI:=FPB;                                                                    20053300 T  0225:2
      LL: IF SC="0" THEN % FIRST DIGIT OF FILE NUMBER                                20053400 T  0225:2
             BEGIN                                                                   20053500 T  0225:3
             SI:=SI+1; IF SC="0" THEN GO TO L2; % END OF FPB                         20053600 T  0226:1
             END ELSE SI:=SI+1;                                                      20053700 T  0226:1
                                                                                     20053800 T  0227:1
                                                                                                   20053600
         SI:=SI+1; T1:=SI; SI:=SI+1; % FILE TYPE LOCATION                            20053900 T  0227:3
         2(DS:=LIT"0"; DS:=7CHR); % MFID,FID                                        20054000 T  0228:2
         T2:=DI; DI:=LOC C; DI:=DI+7; DS:=CHR; DI:=T2; %INT.NAME SIZE              20054100 T  0229:3
         DS:=15LIT"0"; % ZERO OUT REEL,DATE,CYCLE,ETC.                             20054200 T  0231:0
         T2:=SI; SI:=T1; DS:=CHR; SI:=T2; % FILE TYPE                              20054300 T  0233:1
         GO TO SK; L1: GO TO LL; L2: GO TO XXIT; SK:                               20054400 T  0234:1
         SI:=SI+C; % SKIP OVER INTERNAL NAME                                       20054500 T  0235:0
         TOG(T2:=DI; DI:=DI-6; SKIP 3DB; SKIP 4SB;                                 20054600 T  0235:2
             IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB; % SENSITIVE               20054700 T  0237:0
             2(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB); % SPEED                20054800 T  0238:2
             5(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB); % EU                   20054900 T  0240:2
             DI:=T2);                                                              20055000 T  0242:2
         DS:=8LIT"0"; % ZERO OUT FIFTH WORD OF FB                                  20055100 T  0243:0
         GO TO L1;                                                                 20055200 T  0244:1
      XXIT: END STREAM STATEMENT;                                                  20055300 T  0244:2
                                                                                                   20053300
                                                                                     20055400 T  0244:3
      IF MCPJOB THEN GO TO STOP; % NO LABEL EQUATION FOR "SYSTEM" JOBS             20055500 T  0244:3
                                                                                     20055600 T  0245:3
   %%% LABEL EQUATION PROCESSING                                                    20055700 T  0245:3
                                                                                     20055800 T  0245:3
      COMMENT LABEL EQUATION RECORD FORMAT:                                        20055900 T  0245:3
                                                                                     20056000 T  0245:3
         WORD[ 0]          =  MFID ( ZERO, IF NONE GIVEN )                         20056100 T  0245:3
         WORD[ 1]          =  FID                                                  20056200 T  0245:3
         WORD[ 2 ].[1:17]  = REEL NUMBER ( 3 BCL DIGITS )                          20056300 T  0245:3
                  .[18:30] = CREATION DATE ( 5 BCL DIGITS )                        20056400 T  0245:3
                  .[42:1 ] = MARKER FOR FILE OPEN ( 1 = CDATE GIVEN )              20056500 T  0245:3
         WORD[ 3].[ 1:5 ] = CYCLE NUMBER                                           20056600 T  0245:3
                  .[15:8 ] = NUMBER OF COPIES -1                                   20056700 T  0245:3
                  .[23:1 ] = PACKETS                                               20056800 T  0245:3
                  .[42:1 ] = "FORMS" REQUESTED                                     20056900 T  0245:3
                  .[43:5 ] = UNIT TYPE                                             20057000 T  0245:3
         WORD[ 4].[ 0:6 ] = SIZE OF INTERNAL NAME                                  20057100 T  0245:3
                  .[ 6:42] = FIRST SEVEN CHARACTERS OF INTERNAL NAME               20057200 T  0245:3
         WORD[ 5] THROUGH WORD[11] = REMAINDER OF INTERNAL NAME                    20057300 T  0245:3
         WORD[12].[15:1 ] = SENSITIVE BIT                                          20057400 T  0245:3
                  .[16:2 ] = DISK SPEED (1=FAST,2=SLOW,0=NOT SPECIFIED)            20057500 T  0245:3
                  .[18:5 ] = EU NUMBER + 1                                         20057600 T  0245:3
         WORD[14] = START OF NEXT LBL.EQN.ENTRY (14 IF NO MORE ENTRIES)            20057700 T  0245:3
         WORD[29] = LINK TO NEXT ESP SEGMENT FOR LABEL EQUATION                    20057800 T  0245:3
      END OF COMMENT;                                                              20057900 T  0245:3
                                                                                     20058000 T  0245:3
      FOR L := 1 STEP 1 UNTIL 2 DO                                                 20058100 T  0245:3
         BEGIN                                                                     20058200 T  0248:0
         LINK:=IF L THEN S[15] ELSE S[13]; % EQN FROM COMPILE/EXEC.                20058300 T  0248:0
          % S[15] = RELATIVE DISK ADDRESS IN CODE FILE FOR LABEL                   20058400 T  0250:3
```

```
                %              EQUATION ENTERED AT COMPILE TIME                                  20058500 T  0250:3
                % S[13] = ACTUAL ESP DISK ADDRESS OF LABEL EQUATION ENTERED                      20058600 T  0250:3
                %              AT RUN TIME.                                                      20058700 T  0250:3
               S2 := NOT L; % TRUE, IF LBL.EQN.ENTERED AT RUN TIME                             20058800 T  0250:3
               WHILE LINK NEQ 0 DO % IF LBL.EQN.EXISTS                                         20058900 T  0251:3
                  BEGIN                                                                        20059000 T  0253:0
                  IF LBL=0 THEN                                                                20059100 T  0253:0
                  BEGIN                                                                        20059110 T  0254:0
                  M[(LBL:=ARRAYDESC(30,LBLEQNAREAV)) INX NOT 1].AREAMIXF:=0;                   20059120 P  0254:2
                  END;                                                                         20059130 T  0261:2
                                                                                                           20059110
                  % IF LINK=S[15],READ FROM CODE FILE ELSE READ FROM ESP DISK                  20059200 T  0261:2
                  DISKWAIT(-(LBL INX 0), 30,                                                   20059300 T  0261:2
                           IF L THEN ACTUALDISKADDRESS(LINK) ELSE LINK);                       20059400 T  0263:1
                  T := 0; % START AT BEGINNING OF SEGMENT                                      20059500 T  0270:3
                  IF NOT L THEN FORGETESPDISK(LINK);                                           20059600 T  0271:2
                  LINK := LBL[29]; % NEXT LINK                                                 20059700 T  0273:1
                  IF S2 THEN % RUN TIME LABEL EQUATION                                         20059900 T  0274:1
                     BEGIN                                                                     20060000 T  0274:2
                     % IF A COMPILE JOB, SAVE FID OF OBJECT FILE NAME IN                       20060100 T  0275:0
                     % JAR[30] TO PRINT MIX MESSAGE OF THE FORM:                               20060200 T  0275:0
                     %    "ALGOL"/<MFID>/<FID>                                                20060300 T  0275:0
                     IF JAR[MIX,0] LSS 0 THEN JAR[MIX,30]:=LBL[1];                             20060400 T  0275:0
                     S2:=0; % USE THE FIRST EQUATION ONLY                                      20060500 T  0279:0
                     END;                                                                      20060600 T  0279:3
                                                                                                           20060000
                  IF LBL[0] = 14 THEN GO TO STOP;                                              20060800 T  0279:3
               UNBLK: LINDX:=I*14; % INDEX INTO LABEL EQUATION SEGMENT                         20060900 T  0281:1
                  STREAM(FN:=0 ! FT:=[FT], ZERO:=0, T2:=0,                                     20061000 T  0282:2
                        TOG:=(FPBVERSION=1), FPB, F:=[LBL[LINDX+4]], C:=0);                    20061100 T  0284:0
                     BEGIN                                                                     20061200 T  0286:2
                     SI := F; DI:=LOC C; DI:=DI+7 ; DS:=CHR; % LBL.NAM.SIZE                    20061300 T  0286:2
                     SI := FPB;                                                                20061400 T  0287:2
                  L: DI:=LOC FN; DI:=DI+6; DS:=2 CHR; % FILE NUMBER                            20061500 T  0287:3
                     DI := LOC ZERO;  SI:=SI-2;                                                20061600 T  0288:2
                     IF 2 SC = DC THEN GO TO XXIT; % FILE NUMBER=0                             20061700 T  0289:0
                     DI:=FT; DS:=CHR; SI:=SI+14; % SAVE FILE TYPE FOR CHK BELOW                20061800 T  0289:3
                     DI := F; % SI AT FPB INT.NAM,DI AT LBL.EQN.                               20061900 T  0290:2
                     IF SC = DC THEN % SAME STRING SIZE                                        20062000 T  0290:3
                        BEGIN                                                                  20062100 T  0291:1
                        IF C SC=DC THEN GO TO XXIT; % ALL CHARACTERS MATCH                     20062200 T  0291:1
                        END                                                                    20062300 T  0292:1
                                                                                                           20062100
                     ELSE                                                                      20062400 T  0292:1
                        BEGIN % NOT THE SAME SIZE                                              20062500 T  0292:2
                        SI:=SI-1; DI:=LOC T2; DI:=DI+7; DS:=CHR;                               20062600 T  0292:2
                        SI:=SI+T2; % SKIP OVER FPB ENTRY                                       20062700 T  0293:2
                        END;                                                                   20062800 T  0294:0
                                                                                                           20062500
                     TOG(SI:=SI+2); % SPEED AND EU CHARACTERS IN FPB(VERSION 1)                20062900 T  0294:0
                     GO TO L;                                                                  20063000 T  0295:0
               XXIT: END;                                                                      20063100 T  0295:1
                                                                                                           20061200
                  IF (T:=P) NEQ 0 THEN % VALID LABEL EQUATION                                  20063200 T  0295:2
                     BEGIN                                                                     20063300 T  0295:2
                     FBADRS:=(T-1)*ETRLNG+FB; % ADRS OF FB FILE ENTRY                          20063400 T  0296:2
                                                                                               20063500 T  0297:0
```

```
                % FT IS FILE TYPE FROM FPB OBTAINED ABOVE                                  20063600 T  0299:1
                IF (FT1:=LBL[LINDX+3],[43:5]) NEQ @37 THEN FT:=FT1;%NEW TYP               20063700 T  0299:1
                FT:=FT.[43:5]; % REMOVE "FORMS" BIT                                       20063800 T  0303:0
                TYPEDISK ← (FT=10) OR (FT=12) OR (FT=13) OR (FT=26);                      20063900 T  0304:1
                STREAM(X:=LBL[LINDX],TOG:=(TYPEDISK AND (FPBVERSION=1)),                  20064000 T  0308:2
                      FBADRS);                                                            20064100 T  0310:2
                   BEGIN                                                                  20064200 T  0311:0
                   SI:=X; DS:=3WDS; DS:=CHR; % MFID,FID,REEL,DATE,CYCLE                   20064300 T  0311:0
                   TOG(SI:=SI+2; SKIP 5SB; DI:=DI+2; SKIP 5DB;                            20064400 T  0311:3
                       IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB;                        20064500 T  0313:1
                       JUMP OUT TO L); % SAVE EU/SPEED SPECS FOR DISK                     20064600 T  0314:3
                   DS:=3CHR;                                                              20064700 T  0315:2
                L: DS:=3CHR;                                                              20064800 T  0315:3
                   IF SC NEQ "←" THEN % NEW TYPE SPECIFIED                                20064900 T  0316:0
                     IF SC NEQ "=" THEN DS:=CHR ELSE DS:=SET;                             20065000 T  0316:2
                   END STREAM STATEMENT;                                                  20065100 T  0317:3
                                                                                                      20064200
                SENSEVAL := (EUVAL := LBL[LINDX+12],[15:8]).[40:1];                       20065200 T  0318:0
                SPDVAL   := EUVAL.[41:2];                                                 20065300 T  0321:0
                EUVAL    := EUVAL AND @37;                                                20065400 T  0322:1
                IF SPDVAL GTR 0 THEN                                                      20065500 T  0323:2
                   M[FBADRS+3]:=(*P(DUP))&SPDVAL[16:46:2];                                20065600 T  0324:1
                IF SENSEVAL THEN % FILE SENSITIVE                                         20065700 T  0328:0
                   M[FBADRS+3]:=(*P(DUP))&SENSEVAL[15:47:1];                              20065800 T  0328:1
                IF EUVAL GTR 0 THEN % NEW EU NUMBER REQUESTED IN LBL.EQN.                 20065900 T  0332:0
                   M[FBADRS+3]:=(*P(DUP))&EUVAL [18:43:5];                                20066000 T  0332:3
                END; % IF VALID LABEL EQUATION                                            20066100 T  0336:2
                                                                                                      20063400
             IF (I:=I+1) = 1 THEN IF LBL[14] NEQ 14 THEN GO TO UNBLK;                     20066200 T  0336:2
                END; % WHILE LINK NEQ 0                                                   20066300 T  0340:1
                                                                                                      20059000
          STOP: END; % FOR L                                                              20066400 T  0342:0
                                                                                                      20058200
                FORGETSPACE(FPB);                                                         20066500 T  0344:1
                TRP[3] := [M[FB]] & (SEG0[7].[CF]×ETRLNG)[8:38:10];                       20066600 T  0345:0
                END; % IF TYPE = EQUATING                                                 20066700 T  0349:0
                                                                                                      20048200
          EXIT:                                                                           20066800 T  0349:0
                P([RETURNRCW], STS, 0, RDS, 0, XCH, P&P[CTF], STF);                       20080000 T  0349:0
                END PROCEDURE SELECTRUN;                                                  20080100 T  0349:0
                                                                                          20080200 T  0351:3
                                                                                                      20011300
                                                                                                SIZE= 0352 WORDS
```

```
                    PROCEDURE SELECTRUN2;

PRT(645) = SELECTRUN2
                      BEGIN
                       REAL     MSCW          =  -2,
STACK(F-2) = MSCW
                                F             =  -1,
STACK(F-1) = F
                                MYMSCW        =  -1,
STACK(F-1) = MYMSCW
                                RCW           =  +0,
STACK(F+0) = RCW
                                I             =  +1,
STACK(F+1) = I
                                T             =  +2,
STACK(F+2) = T
                                L             =  +3,
STACK(F+3) = L
                                DT            =  +4,
STACK(F+4) = DT
                                MIX           =  +5,
STACK(F+5) = MIX
                                HDR           =  +6,
STACK(F+6) = HDR
                                LEVEL         =  +7,
STACK(F+7) = LEVEL
                                MCPJOB        =  +8,
STACK(F+10) = MCPJOB
                                OLAYDISK      =  +9,
STACK(F+11) = OLAYDISK
                                THISLINK      =  +10,
STACK(F+12) = THISLINK
                                NEXTLINK      =  +11,
STACK(F+13) = NEXTLINK
                                PREVLINK      =  +12,
STACK(F+14) = PREVLINK
                                TYPE          =  +13,
STACK(F+15) = TYPE
                                STACKLOC      =  +14,
STACK(F+16) = STACKLOC
                                SHEETLOCKED   =  +15;
STACK(F+17) = SHEETLOCKED
                          ARRAY
                                S             =  +16[*],
STACK(F+20) = S
                                SEGO          =  +17[*],
STACK(F+21) = SEGO
                                TRP           =  +18[*],
STACK(F+22) = TRP
                                LBL           =  +19[*],
STACK(F+23) = LBL
                                SD            =  NT2[*],
PRT(161) = SD
                                TSKA          =  NT2[*];
PRT(161) = TSKA
```

```
                                20080300 T  0000:0
                                20080400 T  0000:0
                                20080500 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00595

                                20080600 T  0000:0
                                20080700 T  0000:0
                                20080800 T  0000:0
                                20080900 T  0000:0
                                20081000 T  0000:0
                                20081100 T  0000:0
                                20081200 T  0000:0
                                20081300 T  0000:0
                                20081400 T  0000:0
                                20081500 T  0000:0
                                20081600 T  0000:0
                                20081700 T  0000:0
                                20081800 T  0000:0
                                20081900 T  0000:0
                                20082000 T  0000:0
                                20082100 T  0000:0
                                20082200 T  0000:0
                                20082300 T  0000:0
                                20082400 T  0000:0
                                20082500 T  0000:0
                                20082600 T  0000:0
                                20082700 T  0000:0
                                20082800 T  0000:0
                                20082900 T  0000:0
                                20083000 T  0000:0
                                20083100 T  0000:0
                                20083200 T  0000:0
```

```
                    NAME    ADDR        = LBL +1;                                          20083300 T  0000:0
STACK(F+24) = ADDR                                                                         20083500 T  0000:0
                    REAL    PASSLEVEL   = ADDR + 1,                                       20083600 T  0000:0
STACK(F+25) = PASSLEVEL
                            SVALUE      = PASSLEVEL,                                       20083700 T  0000:0
STACK(F+25) = SVALUE
                            RETURNMSCW  = PASSLEVEL + 1,                                   20083800 T  0000:0
STACK(F+26) = RETURNMSCW
                            RETURNRCW   = RETURNMSCW + 1;                                  20083900 T  0000:0
STACK(F+27) = RETURNRCW

                                                                                           20084000 T  0000:0
                    DEFINE SHEETMAX = MIXMAX#;                                             20084100 T  0000:0
                                                                                           20084200 T  0000:0
                                                                                           20085300 T  0000:0
                    %%%%                    ***NOTE****                                    20085400 T  0000:0
                    %%%% THE VARIABLES DECLARED ABOVE MUST CORRESPOND EXACTLY TO            20085500 T  0000:0
                    %%%% THOSE DECLARED IN PROCEDURE SELECTRUN.                           20085600 T  0000:0
                    REAL MESAGESPACE = RETURNRCW + 1; % LOCAL TO THIS PROCEDURE            20085700 T  0000:0
STACK(F+30) = MESAGESPACE

                                                                                           20085710 T  0000:0
                    LABEL DLX, BMSG, SKIP, EXIT;                                  %127-    20085800 P  0000:0
                                                                                           20085900 T  0000:0
                    DEFINE XCLOCKTIME =                                                    20086000 T  0000:0
                        (((NT2:=(XCLOCK DIV 3600)) MOD 60 + (NT2 DIV 60)*100 +             20086100 T  0000:0
                         0.5 ) DIV 1)#;                                                    20086200 T  0000:0
                                                                                           20086300 T  0000:0
                    DEFINE ACTUALDISKADDRESS(ACTUALDISKADDRESS1) =                         20086400 T  0000:0
                        ((JAR[MIX,((NT4:=ACTUALDISKADDRESS1) DIV (NT3:=JAR[MIX,8]))+10]    20086500 T  0000:0
                         + (NT4 MOD NT3) + 0.5) DIV 1)#;                                   20086600 T  0000:0
                                                                                           20086700 T  0000:0
$ SET OMIT = NOT(PACKETS)                                                                  20086799 T  0000:0
   DEFINE UNITNO = S[23].[2:6]#;  % ORIGINATING UNIT                                       20086800 T  0000:0
$ POP OMIT                                                                                 20086801 T  0000:0
                                                                                           20086810 T  0000:0
   DEFINE DALOCSIZE = 9#;                                                                  20087200 T  0000:0
                                                                                           20087400 T  0000:0
   % VALUES ASSOCIATED WITH "TYPE" :                                                       20087500 T  0000:0
                                                                                           20087600 T  0000:0
   DEFINE STARTING      =  1#,                                                             20087700 T  0000:0
          CONTINUEING   =  2#,                                                             20087800 T  0000:0
          QUITTING      =  3#,                                                             20087900 T  0000:0
          RUNING        =  4#,                                                             20088000 T  0000:0
          PASSING       =  5#,                                                             20088100 T  0000:0
          EQUATING      =  6#;                                                             20088200 T  0000:0
                                                                                           20088300 T  0000:0
   SUBROUTINE DELINK;                                                                      20088400 T  0000:0
   % DELINKS THE SHEET ENTRY AND RETURNS SHEET DISK SPACE                                  20088500 T  0001:0
       BEGIN                                                                               20088600 T  0001:0
       STREAM(A:=S[3].[8:10],B:=P(,SCHEDULEIDS));                                          20088700 T  0001:0
           BEGIN % MARK SCHEDULE SLOT "OPEN"                                               20088800 T  0002:3
           SKIP A DB; DS:=RESET;                                                           20088900 T  0002:3
           END;                                                                            20089000 T  0003:2
                                                                                                    20088800
       IF F = 0 THEN % SHEET ENTRY NOT PASSED AS PARAMETER                                 20089100 T  0003:3
           BEGIN                                                                           20089200 T  0004:2
           IF NEXTLINK=0 THEN SHEET[LEVEL].[FF]:=PREVLINK;                                 20089300 T  0005:0
```

```
                IF PREVLINK=0 THEN                                                  20089400 T  0008:1
                    BEGIN                                                           20089500 T  0009:0
                    SHEFT[LEVEL].[CF]:=NEXTLINK; GO DLX;                            20089600 T  0009:2
                    END;                                                            20089700 T  0012:0
                                                                                                20089500
                IF LBL=0 THEN                                                       20089800 T  0012:0
                BEGIN                                                               20089810 T  0013:0
                M[(LBL:=ARRAYDESC(30,LBLEQNAREAV)) INX NOT 1],AREAMIXF:=0;          20089820 P  0013:2
                END;                                                                20089830 T  0020:2
                                                                                            20089810
                DISKWAIT(-(LBL INX 0), 30, PREVLINK);                               20089900 T  0020:2
                LBL[29]:=NEXTLINK;                                                  20090000 T  0022:3
                DISKWAIT( (LBL INX 0), 30, PREVLINK);                               20090100 T  0024:0
DLX:            FORGETESPDISK(THISLINK);                                            20090200 T  0026:0
                END; % IF SHEET ENTRY NOT A PARAMETER                               20090300 T  0026:3
                                                                                            20089200
            END DELINK;                                                             20090400 T  0026:3
                                                                                            20088600
                                                                                    20090500 T  0027:0
        BOOLEAN SUBROUTINE REENTRY;                                                 20090700 T  0027:0
            BEGIN                                                                   20090800 T  0027:0
            POLISH(FALSE);                                                          20090900 T  0027:0
            IF JAR[MIX,2].[8:10] NEQ 0 THEN % NOT "GO" FROM COMPILE AND GO          20091000 T  0027:1
            IF NOT (S[2].[2:1]) THEN % NOT ES-ED                                    20091100 T  0029:1
            FOR I:=1 STEP 1 UNTIL MIXMAX DO                                         20091200 T  0031:0
            IF JAR[I,*] NEQ 0 THEN                                                  20091300 T  0033:0
            IF ((JAR[MIX,0] EQV JAR[I,0])) = (NOT 0) THEN % SAME MFID               20091400 T  0034:0
            IF ((JAR[MIX,0] LSS 0) OR % COMPILER                                    20091500 T  0037:2
            (((JAR[MIX,1] EQV JAR[I,1])) = (NOT 0))) THEN % SAME FID                20091600 T  0039:2
            IF JAR[I,10] NEQ 0  THEN % COMPILER OR SAME MFID                        20091700 T  0042:3
            IF JAR[I,2].[8:10] NEQ 0 THEN % NOT "GO" PART OF COMP.& GO              20091800 T  0044:3
            IF PRYOR[I] GEQ 0 OR                                                    20091900 T  0047:1
            NFO[(I-1)×NDX+1].[FF] NEQ 0 THEN % RUNNING                              20092000 T  0048:3
                BEGIN                                                               20092100 T  0052:0
                COMMENT MAKE THE ENTRY IN LINKED-LIST STYLE;                        20092200 T  0052:2
                IF PRT[I,4].[FF] NEQ 0 THEN % ALREADY PRESENT                       20092300 T  0052:2
                    BEGIN                                                           20092400 T  0054:2
                    COMMENT ENTER AT TAIL OF PREVIOUS LIST;                         20092500 T  0055:0
                    DO NT1:=I UNTIL (I:=PRT[I,4].[24:6])=@77;                       20092600 T  0055:0
                    NFO[(MIX-1)×NDX+1]:=TRP[4]:=PRT[NT1,4];                         20092700 T  0058:3
                    NFO[(NT1-1)×NDX+1]:=PRT[NT1,4]:=                                20092800 T  0063:1
                    (*P(DUP))&MIX[24:42:6];                                         20092900 T  0066:1
                    END                                                             20093000 T  0068:3
                                                                                                20092400
                ELSE                                                                20093100 T  0068:3
                    BEGIN                                                           20093200 T  0068:3
                    COMMENT CONSTRUCT NEW LIST;                                     20093300 T  0069:1
                    NFO[(I-1)×NDX+1]:=PRT[I,4]:=                                    20093400 T  0069:1
                    (*P(DUP))&I[18:42:6]&MIX[24:42:6];                              20093500 T  0072:1
                    NFO[(MIX-1)×NDX+1]:=TRP[4]:=                                    20093600 T  0075:3
                    PRT[I,4]&@77[24:42:6];                                          20093700 T  0078:1
                    END;                                                            20093800 T  0081:1
                                                                                                20093200
                POLISH(DEL,TRUE);                                                   20093900 T  0081:1
                I:=MIXMAX;                                                          20094000 T  0081:3
                END;                                                                20094100 T  0082:2
                                                                                                20092100
```

```
        REENTRY:=POLISH;
        END REENTRANT CODE LINKAGE ESTABLISHMENT SUBROUTINE;                                  20094200 T  0084:3
                                                                                              20094300 T  0085:0
                                                                                                          20090800
    P(MYMSGW, STF);                                                                           20094500 T  0085:1
    P(0); % MESAGE SPACE, LOCAL TO THIS PROCEDURE                                             20094600 T  0085:1
                                                                                              20094610 T  0086:3
%    ****   *****     ***      *****   *****  *****  *****                                    20094700 T  0087:0
%    *   *  *   *      *      *  *  *  *      *      *                                        20094800 T  0087:0
%    ****   *   *      *      *  *  *  *****  *****  *  **                                    20094900 T  0087:0
%    *   *  *   *   *  *      *  *  *  *          *  *   *                                    20095000 T  0087:0
%    ****   *****   ****      *  *  *  *****  *****  *****  0                                 20095100 T  0087:0
                                                                                              20095200 T  0087:0
 $ SET OMIT = NOT( DCSPO AND DATACOM )                                                        20095300 T  0087:0
    IF BOJMESS THEN                                                                           20098900 T  0087:0
       IF MCPJOB.[1:1] THEN % "SYSTEM" TYPE JOB                                               20100700 T  0087:0
          IF NOT (AUTOMESS) THEN % SUPPRESS BOJ/EOJ MESSAGE                                   20100800 T  0087:3
             IF NOT (S[2].[2:1]) THEN % NOT ES=ED                                             20100900 T  0089:0
                IF S[2].[4:1] THEN % SUPRESS BOJ/EOJ MESSAGE                                  20101000 T  0090:2
                   BEGIN                                                                      20101100 T  0092:1
                   STREAM(N:=S[0], MIX, T:=T:=SPACE(4));                                      20101200 T  0093:3
                      BEGIN                                                                   20101300 T  0094:1
                      DS:=6LIT" AUTO=";                                                       20101400 T  0097:3
                      SI:=LOC N; SI:=SI+1; DS:=7CHR;                                          20101500 T  0097:3
                      DS:=2LIT" =";  SI:=LOC MIX; DS:=2DEC;                                   20101600 T  0098:3
                      DS:=LIT"+"; DI:=DI-3; DS:=FILL;                                         20101700 T  0099:2
                      END;                                                                    20101800 T  0100:2
                                                                                              20101900 T  0101:2
                                                                                                          20101400
                   SPOUT(T);                                                                  20102000 T  0101:3
                   GO TO SKIP;                                                                20102100 T  0103:0
                   END;                                                                       20102200 T  0103:2
                                                                                                          20101200
 $ SET OMIT = PACKETS                                                                         20104600 T  0103:2
 $ SET OMIT = NOT(PACKETS)                                                                    20104900 T  0103:2
    IF (NOT MCPJOB OR BOJMESS)                                                                20105000 T  0103:2
 $ POP OMIT % PACKETS                                                                         20105100 T  0104:0
    AND NOT S[2].[2:1] THEN % S[2].[2:1]=1 WHEN ES=ED                                         20105200 T  0104:0
        BEGIN                                                                                 20105300 T  0106:2
        GIMEDATE([DT],[CF],-DT); % CONVERT DATE TO "MMDDYY" FORMAT                            20105350 T  0107:0
        STREAM(DAAT:=DT, DTOG:=NOT(MCPJOB) AND TRUE, SV :=0,                                  20105400 T  0108:3
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                          20105500 T  0110:2
                C:=S[18], A:=JARROW[MIX], MIX,  % S[18]=PRIORITY                              20105900 T  0110:2
                Q:=XCLOCKTIME, B:=MESAGESPACE:=GETSPACE(12,0,0)+2);                           20106000 T  0111:3
            BEGIN                                                                             20106100 T  0118:2
            SI:=LOC C; DS:=6DEC; DI:=DI-6; DS:=5FILL;    % PRIORITY                            20106200 T  0118:2
            DI:=B; DI:=DI+6; DS:=LIT":";                                                      20106300 T  0119:2
            SI:=A; SI:=SI+1; DS:=7CHR;                   % MFID                                20106400 T  0120:2
            DS:=LIT"/"; SI:=SI+1; DS:=7CHR;              % FID                                 20106500 T  0121:1
            SI:=LOC MIX; DS:=LIT"="; DS:=2DEC;           % MIX                                 20106600 T  0122:1
            SV:=DI; DI:=DI-2; DS:=FILL; DI:=SV;                                               20106700 T  0123:1
            DS:=5LIT" BOJ "; DS:=4DEC; DS:=LIT" ";       % TIME                                20106800 T  0124:1
            DTOG(SI:=LOC DAAT; SI:=SI+2;                                                      20106900 T  0126:0
            3(DS:=2CHR; DS:=LIT"/"); DI:=DI-1);          % CDATE                               20107000 T  0127:0
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                          20107100 T  0128:3
            DS:=LIT"+";                                                                       20107500 T  0128:3
            END STREAM STATEMENT;                                                             20107600 T  0129:1
                                                                                                          20106100
```

```
 $ SET OMIT = NOT(DCSPO AND DATACOM)                                                    20107700 T  0129:2
                                                                                        20108400 T  0129:2
       END;                                                                             20108500 T  0129:2
                                                                                                    20105300
                                                                                        20108700 T  0129:2
SKIP:                                                                                   20108800 T  0129:2
                                                                                        20108900 T  0129:2
                                                                                        20109000 T  0129:2
%    *****  *****  *****     *****  *****  *****  *****                                 20109100 T  0129:2
%    *      *      *           *    *      *   *  *   *                                 20109200 T  0129:2
%    *****  *****  *  **       *    *****  *****  *   *                                 20109300 T  0129:2
%        *  *      *   *      *     *      *  *   *   *                                 20109400 T  0129:2
%    *****  *****  *****     *****  *****  *   *  *****                                 20109500 T  0129:2
                                                                                        20109600 T  0129:2
    JAR[MIX,2] := (*P(DUP)) & SEGO[2][1:1:2] &                                          20110700 T  0129:2
                  SEGO[2][5:2:3] &                                                      20110900 T  0132:1
                  SEGO[7][3:2:1];                                                       20111100 T  0133:2
    % SEGO[2].[1:1] = JOB COMPILED BY COBOL ( NO "OAT" ENTRY )                         20111200 T  0135:1
    % SEGO[2].[2:3], SEGO[7].[2:1] = USED FOR INTER-PROG.COMMUNICATION                 20111300 T  0135:1
    IF SEGO[2].[2:1] THEN SOFTI:=SOFTI+1;                                               20111500 T  0135:1
    IF SEGO[2].[4:1] AND (MESAGESPACE#0) THEN % INVOKED I.P.C. TASK%110-                20111600 C  0138:0
       BEGIN % CHANGE BOJ TO BOT                                          %110-         20111610 C  0140:0
       STREAM(MESAGESPACE); BEGIN DI=DI+28; DS=LIT"T"; END;               %110-         20111620 C  0140:2
                                                                                                    20111620
       END;                                                               %110-         20111630 C  0142:1
                                                                                                    20111610
 $ SET OMIT = NOT(BREAKOUT)                                                             20111800 T  0142:1
                                                                                        20115200 T  0142:1
%    *****  *****  *****  *****  *   *           *****  *****  *****                    20115300 T  0142:1
%    *        *    *   *  *      * *       *      *   *  *   *    *                    20115400 T  0142:1
%    *****    *    *****  *      ***      *****   *****  *****    *                    20115500 T  0142:1
%        *    *    *   *  *      * *        *      *      *  *     *                    20115600 T  0142:1
%    *****    *    *   *  *****  *   *              *      *   *    *                    20115700 T  0142:1
                                                                                        20115800 T  0142:1
    IF MESAGESPACE NEQ 0 THEN % BOJ MESSAGE BUILD                                       20118350 T  0142:1
        BEGIN                                                                           20118360 T  0143:0
        SPOUTER(MESAGESPACE,UNITNO,(BOJMESS AND NOT S[2].[2:1]));                       20118370 T  0143:2
        % S[2].[2:1] = 1 WHEN ES-ED                                                    20118380 T  0147:2
        MESAGESPACE:=0;                                                                 20118390 T  0147:2
        END;                                                                            20118400 T  0148:1
                                                                                                    20118360
    M[STACKLOC].[9:6] := MIX; % PLACE MIX INDEX IN MEMORY LINK                          20118600 T  0148:1
    % COMPUTE THE ADDRESS FOR THE PRT SUCH THAT PRTADRS.[42:6]=0                       20118800 T  0151:0
    T:=(((STACKLOC:=STACKLOC+2)+S[21]) OR 63) + 1; % S[21]=STACKSIZE                   20118900 T  0151:0
    IF ((I:=M[STACKLOC-2].[CF])-(L:=SEGO[3] INX T)) GTR 10 THEN                         20119000 T  0154:2
       BEGIN % RETURN REMAINDER OF PRT SPACE                                            20119100 T  0159:1
       IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);                                    20119600 T  0159:3
       LOCKTOG(STOREMASK);                                                              20119700 T  0162:3
                                                                                                    20119700
       M[L] := I & (STACKLOC-2)[CTF] & MIX[9:42:6]; % NEW LINK                          20119900 T  0166:1
       M[I].[FF]           := L;                    % BACK LINK                       20120000 T  0169:3
       M[STACKLOC-2].[CF] := L;                     % FORWARD LINK                    20120100 T  0172:0
       UNLOCKTOG(STOREMASK);                                                            20120600 T  0174:3
                                                                                                    20120600
       FORGETSPACE(L+2);                                                                20120800 T  0178:1
       END; % IF PRT SPACE WAS TOO LARGE                                                20120900 T  0179:2
                                                                                                    20119100
    %   ZERO OUT STACK TO EASE PROBLEMS OF CONGENITAL DUMP-READERS                      20121000 T  0179:2
```

```
    M[STACKLOC] := @3333333333333333;                                          20121100 T  0179:2
    MOVE(T-STACKLOC-1,STACKLOC,STACKLOC+1);                                    20121200 T  0181:0
                                                                               20121300 T  0184:0
%   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .      20121400 T  0184:0
%   READ IN PRT FROM DISK                                                      20121500 T  0184:0
%   . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .      20121600 T  0184:0
                                                                               20121700 T  0184:0
    DISKWAIT(-T, SEGO[3].[CF], ACTUALDISKADDRESS(SEGO[2].[CF]));               20121800 T  0184:0
    % SEGO[2] = RELATIVE DISK ADDRESS OF THE PRT IN THE CODE FILE              20121900 T  0192:2
    % SEGO[3] = SIZE OF THE PRT                                               20122000 T  0192:2
    TRP:=PRTROW[MIX]:=[M[T]]&1023[8:38:10]; % DESCRIPTOR TO THE PRT             20122100 T  0192:2
                                                                               20122200 T  0195:3
%   *****  *****  *****     ****    ***   *****  *****                        20122300 T  0195:3
%   *      *      *         *   *    *    *        *                          20122400 T  0195:3
%   *****  *****  *  **     *   *    *    *        *                          20122500 T  0195:3
%       *  *      *   *     *   *    *    *        *                          20122600 T  0195:3
%   *****  *****  ***** 0   ****    ***   *****    * 0                        20122700 T  0195:3
                                                                               20122800 T  0195:3
    IF REENTRY THEN                                                            20123000 T  0195:3
        BEGIN                                                                  20123100 T  0197:0
        % RE-ENTRANT JOB, PRT[4] POINTS TO EXISTING SEGMENT DICTIONARY         20123200 T  0197:2
        COMMENT BUILD PHONY ICW, IRCW, & INCW;                                 20123300 T  0197:2
        M[STACKLOC]   := @2222222222222222;                                    20123400 T  0197:2
        M[STACKLOC+1] := -FLAG(0&(TRP)[6:33:9]);                               20123500 T  0199:0
        M[STACKLOC+2] := -FLAG(0);                                             20123600 T  0202:3
        TRP[8]        := -FLAG(STACKLOC+2);                                    20123700 T  0205:1
        TRP[10]       := TRP&(STACKLOC+1)[18:33:15];                           20123800 T  0207:2
        END % REENTRY                                                          20123900 T  0210:0
                                                                                           20123100
    ELSE                                                                       20124000 T  0210:0
        BEGIN                                                                  20124100 T  0210:0
        NFO[(MIX-1)*NDX+1] :=                                                  20124700 T  0215:0
        TRP[4]:=[M[T:=GETSPACE(SEGO[1],[CF],SEGDICTAREAV,1)+2]];   %167-       20124900 P  0217:0
        DISKWAIT(-T, SEGO[1],[CF], ACTUALDISKADDRESS(SEGO[0].[CF]));           20125000 T  0222:0
        % SEGO[0]= RELATIVE DISK ADDRESS OF SEGMENT DICTIONARY                 20125100 T  0230:2
        % SEGO[1]= SIZE OF THE SEGMENT DICTIONARY                              20125200 T  0230:2
        M[TRP[4]] := SEGO[1],[CF] -1; % SEGDICT[0]=SIZE OF DICTIONARY          20125300 T  0230:2
 $ SET OMIT = NOT(AUXMEM)                                                      20125400 T  0233:2
        END; % NOT REENTRY                                                     20126400 T  0233:2
                                                                                           20124100
                                                                               20126600 T  0233:2
%   ****   *****  *      *****  *****                                          20126700 T  0233:2
%   *   *  *   *  *      *   *  *                                              20126800 T  0233:2
%   *   *  *****  *      *   *  *                                              20126900 T  0233:2
%   *   *  *   *  *      *   *  *                                              20127000 T  0233:2
%   ****   *   *  *****  *****  *****                                          20127100 T  0233:2
                                                                               20127200 T  0233:2
    STREAM(D:=DALOCROW[MIX]:=SAVEARRAYDESC(DALOCSIZE,DALOCROWAREAV));          20127300 P  0233:2
        BEGIN                                                                  20127500 T  0238:1
        SI:=D; SI:=SI-8; DS:=DALOCSIZE WDS;                                    20127600 T  0238:1
        END;                                                                   20127700 T  0239:0
                                                                                           20127500
    IF OLAYDISK NEQ 0 THEN % OLAY DISK OBTAINED ABOVE                          20127800 T  0239:1
       BEGIN                                                                   20127900 T  0240:0
       DALOC[MIX,0] := @200002;                                                20128000 T  0240:2
       DALOC[MIX,1] := OLAYDISK;                                               20128100 T  0242:1
       OLAYDISK     := 0;                                                      20128200 T  0244:0
```

```
        END;                                                                    20128300 T  0244:3
                                                                                              20127900
    OLAYMASK := TWO(MIX) OR OLAYMASK; % OLAYS NOW ALLOWABLE                     20128400 T  0244:3
                                                                                20128500 T  0246:2
%   *****  *****   *****    *****   *****  *    *                              20128600 T  0246:2
%   *      *   *  *   *  *  *   *  *   *  *   **   *                          20128700 T  0246:2
%   *      *   *  *   *  *  *   *  *   *  *   * *  *                          20128800 T  0246:2
%   *      *   *  *   *  *  *   *  *   *  *   *  * *                          20128900 T  0246:2
%   *****  *****  *   *  *  *   *  *   *  *****  *   **                        20129000 T  0246:2
                                                                                20129100 T  0246:2
    % PLACE "COMMON" VALUE IN FIRST SIMPLE VARIABLE IN THE PRT                  20129200 T  0246:2
    NT1 := S[19]; % COMMON VALUE IN SHEET[19]                                   20129300 T  0246:2
    FOR I:= @25 STEP 1 WHILE NT1 NEQ 0 AND I LSS SEGO[3] DO                     20129400 T  0247:2
    IF TRP[I]=0 THEN % SIMPLE VARIABLE (NOT A DESCRIPTOR)                       20129500 T  0252:3
        BEGIN                                                                   20129600 T  0253:3
        TRP[I]:=NT1;                                                            20129700 T  0254:1
        NT1:=0                                                                  20129800 T  0255:2
        END;                                                                    20129900 T  0255:2
                                                                                              20129600
    DELINK; % DELINK SHEET ENTRY FROM SHEET QUEUE                               20130000 T  0259:0
                                                                                20130100 T  0260:0
EXIT:                                                                           20140000 T  0260:0
                                                                                20140100 T  0260:0
    P[RETURNRCW], STS, 0, RDS, 0, XCH, P&P[CTF], STF);                          20140200 T  0260:0
    END PROCEDURE SELECTRUN2;                                                   20140300 T  0262:3
                                                                                              20080600
                                                                                          SIZE= 0263 WORDS
```

```
                % FOR ADDITIONAL INFORMATION CONCERNING THE SHEET, SEE THE
                % DOCUMENT AT SEQUENCE NUMBER 20512000

                PROCEDURE SELECTRUN(F); VALUE F; REAL F;

                    BEGIN

                    REAL    MSCW        =  -2,
STACK(F-2) = MSCW
                            F           =  -1,
STACK(F-1) = F
                            MYMSCW      =  -1,
STACK(F-1) = MYMSCW
                            RCW         =  +0,
STACK(F+0) = RCW
                            I           =  +1,
STACK(F+1) = I
                            T           =  +2,
STACK(F+2) = T
                            L           =  +3,
STACK(F+3) = L
                            DT          =  +4,
STACK(F+4) = DT
                            MIX         =  +5,
STACK(F+5) = MIX
                            HDR         =  +6,
STACK(F+6) = HDR
                            LEVEL       =  +7,
STACK(F+7) = LEVEL
                            MCPJOB      =  +8,
STACK(F+10) = MCPJOB
                            OLAYDISK    =  +9,
STACK(F+11) = OLAYDISK
                            THISLINK    =  +10,
STACK(F+12) = THISLINK
                            NEXTLINK    =  +11,
STACK(F+13) = NEXTLINK
                            PREVLINK    =  +12,
STACK(F+14) = PREVLINK
                            TYPE        =  +13,
STACK(F+15) = TYPE
                            STACKLOC    =  +14,
STACK(F+16) = STACKLOC
                            SHEETLOCKED =  +15;
STACK(F+17) = SHEETLOCKED

                    INTEGER EST         =  1;     % USED FROM 20163700 TO 20165300
STACK(F+1) = EST

                    ARRAY   S           =  +16[*],
STACK(F+20) = S
                            SEGO        =  +17[*],
STACK(F+21) = SEGO
                            TRP         =  +18[*],
STACK(F+22) = TRP
                            LBL         =  +19[*],
```

```
20140400 T  0000:0
20140500 T  0000:0
20140600 T  0000:0
20140700 T  0000:0
20140800 T  0000:0
START OF REL SEGMENT; DISK ADDRESS = 00604
20140900 T  0000:0
20141000 T  0000:0
20141100 T  0000:0
20141200 T  0000:0
20141300 T  0000:0
20141400 T  0000:0
20141500 T  0000:0
20141600 T  0000:0
20141700 T  0000:0
20141800 T  0000:0
20141900 T  0000:0
20142000 T  0000:0
20142100 T  0000:0
20142200 T  0000:0
20142300 T  0000:0
20142400 T  0000:0
20142500 T  0000:0
20142600 T  0000:0
20142700 T  0000:0
20142800 T  0000:0
20142900 T  0000:0
20142940 T  0000:0
20142950 T  0000:0
20143000 T  0000:0
20143100 T  0000:0
20143200 T  0000:0
20143300 T  0000:0
20143400 T  0000:0
```

```
STACK(F+23) = LBL
                        SD          = NT2[*],
PRT(161) = SD
                        TSKA        = NT2[*];
PRT(161) = TSKA

                NAMF    ADDR        = LBL +1;
STACK(F+24) = ADDR
                REAL    PASSLEVEL   = ADDR + 1,
STACK(F+25) = PASSLEVEL
                        SVALUE      = PASSLEVEL,
STACK(F+25) = SVALUE
                        RETURNMSCW  = PASSLEVEL + 1,
STACK(F+26) = RETURNMSCW
                        RETURNRCW   = RETURNMSCW + 1;
STACK(F+27) = RETURNRCW

        DEFINE SHEETMAX = MIXMAX#;


        %%%%                    ***NOTE****
        %%%%  RETURNMSCW AND RETURNRCW ***MUST*** BE THE LAST TWO
        %%%%  VARIABLES DECLARED IN THIS PROCEDURE.

        DEFINE XCLOCKTIME =
            (((NT2:=(XCLOCK DIV 3600)) MOD 60 * (NT2 DIV 60)*100 +
             0.5 ) DIV 1)#;

    $ SET OMIT = NOT(PACKETS)
      DEFINE UNITNO = S[23].[2:6]#;  % ORIGINATING UNIT
    $ POP OMIT

    $ POP OMIT

      LABEL START, CONTINUE, LOAD, PASS, WINDUP, QUIT;
      LABEL JARSPACE, TRYAGAIN, NG;                          %127-

      SWITCH SW := QUIT, START, CONTINUE, QUIT, QUIT, PASS;

      COMMENT THE VALUE OF "TYPE" MAY DETERMINE WHICH PORTIONS OF
      PROCEDURES "SELECTRUN1" AND/OR "SELECTRUN2" WILL BE EXECUTED.
      PROCEDURE "SELECTRUN1" AND "SELECTRUN2" MAY, IN TURN, SPECIFY
      THE BRANCH POINT IN THIS PROCEDURE.
      THE FOLLOWING DEFINES ARE USED TO SPECIFY THE BRANCH POINT
      IN SWITCH "SW".
      END OF COMMENT;

      DEFINE STARTING     =  1#,
             CONTINUEING  =  2#,
             QUITTING     =  3#,
             RUNING       =  4#,
             PASSING      =  5#,
             EQUATING     =  6#;

      P(0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0);
      RCW := RCW & P(,,SELECTRUN,LOD)[CTC];

      TYPE := STARTING;
```

```
20143500 T  00001:0
20143600 T  00001:0
20143700 T  00001:0
20143900 T  00001:0
20144000 T  00001:0
20144100 T  00001:0
20144200 T  00001:0
20144300 T  00001:0
20144400 T  00001:0
20144500 T  00001:0
20144600 T  00001:0
20145700 T  00001:0
20145800 T  00001:0
20145900 T  00001:0
20146000 T  00001:0
20146100 T  00001:0
20146200 T  00001:0
20146300 T  00001:0
20146400 T  00001:0
20146410 T  00001:0
20146419 T  00001:0
20146420 T  00001:0
20146421 T  00001:0
20146500 T  00001:0
20146600 T  00001:0
20146700 P  00001:0
20146800 T  00001:0
20146900 T  00001:0
20147000 T  00001:0
20147100 T  00001:0
20147200 T  00001:0
20147300 T  00001:0
20147400 T  00001:0
20147500 T  00001:0
20147600 T  00001:0
20147700 T  00001:0
20147800 T  00001:0
20147900 T  00001:0
20148000 T  00001:0
20148100 T  00001:0
20148200 T  00001:0
20148300 T  00001:0
20148400 T  00001:0
20148500 T  00001:0
20148700 T  00001:0
20149200 T  00051:1
20149300 T  00061:3
20149400 T  00061:3
20149500 T  00071:2
```

```
START:

    P1M:X := 0;
    IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER
       BEGIN
       S   := IOQUE & E[CTC]; % SHEET ENTRY
       HDR := F.[FF]; % CORE ADDRESS OF OBJECT FILE HEADER
       END

    ELSE
        BEGIN
        IF TYPE=STARTING AND NOT SHEETLOCKED THEN
            BEGIN
            SLEEP([TOGLE],SHEETMASK);
            LOCKTOG(SHEETMASK);

            SHEETLOCKED := 1;
            END;

        P([SVALUE], STS);
        SELECTRUN1;
        IF TYPE LSS 0 THEN
            GO TO SW[TYPE:=ABS(TYPE)];
        END;


CONTINUE:

    P1M:X := 0;
    IF (MCPJOB := S[2].SSYSJOBF) THEN
      IF (MCPJOB = PRNPBTCODE AND AUTOPRINT) OR
         (MCPJOB = LDCNTRLCODE AND CDONLY) THEN
                  MCPJOB.[1:1] := 1;

    % NOTE: A NEGATIVE SIGN FOR MCPJOB IMPLIES THAT THIS JOB
    %       SHOULD BE STARTED REGARDLESS OF THE AVAILABILITY OF
    %       SYSTEM CORE.

    IF INTSIZE=0 THEN % NO INTRINSICS FILE
        IF NOT(MCPJOB) THEN % NOT "SYSTEM" PROGRAM
           BEGIN
           STREAM(NT3:=NT3:=SPACE(4));
           DS:=24 LIT"##NO INTRINSICS FILE...←";
           SPOUT(NT3);
           SLEEP([INTSIZE],@1777);
           END;


    WHILE(NT2:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;


%   *****  *      *****  *   *     ****   ***   *****  *   *
%   *   *  *      *   *  * *      *   *   *    *      *  *
%   *   *  *      *****   *       *   *   *    *****  ***
%   *   *  *      *   *   *       *   *   *    *      *  *
%   *****  *****  *   *   *       ****   ***   *****  *   *
```

```
20149600 T  0007:2
20149700 T  0007:2
20149800 T  0007:2
20149900 T  0008:1
20150000 T  0009:0
20150100 T  0009:2
20150200 T  0011:0
20150300 T  0012:1
                   20150000
20150400 T  0012:1
20150500 T  0012:1
20150600 T  0012:3
20150700 T  0014:1
20150800 T  0014:3
20150900 T  0016:1
                   20150900
20151000 T  0019:3
20151100 T  0020:2
                   20150700
20151200 T  0020:2
20151300 T  0021:1
20151400 T  0021:3
20151500 T  0022:2
20151600 T  0027:3
                   20150500
20151700 T  0027:3
20151800 T  0027:3
20151900 T  0027:3
20152000 T  0027:3
20152100 T  0028:2
20152200 T  0030:0
20152300 T  0032:1
20152800 T  0034:1
20152900 T  0036:2
20153000 T  0036:2
20153100 T  0036:2
20153200 T  0036:2
20153300 T  0036:2
20153400 T  0036:2
20153500 T  0037:1
20153600 T  0038:1
20153700 T  0038:3
20153800 T  0041:2
20153900 T  0045:0
20154000 T  0046:1
20154100 T  0047:3
                   20153600
20154200 T  0047:3
20157700 T  0047:3
                   20157700
20157800 T  0055:1
20157900 T  0055:1
20158000 T  0055:1
20158100 T  0055:1
20158200 T  0055:1
20158300 T  0055:1
20158400 T  0055:1
```

```
    IF NOT MCPJOB THEN % NOT "LIBMAIN","LDCNTRL","PRNPBT"                                  20158500 T  0055:1
    IF OLAYDISK=0 THEN % NO OLAY DISK OBTAINED YET                                         20158600 T  0055:3
    IF(OLAYDISK:=PETUSERDISK(500 OR M,1))=0 THEN % NO OLAY DISK                            20159100 T  0057:0
        BEGIN                                                                              20159200 T  0060:0
        L:=1;                                                                              20159500 T  0060:2
        GO TO PASS;                                                                        20159900 T  0061:1
        END; % IF NO OLAY DISK                                                             20160000 T  0061:3
                                                                                                       20159200

COMMENT JOB WILL BE RUN ONLY IF:                                                           20160200 T  0061:3
        1) AN XS OR ES MESSAGE HAS BEEN ENTERED FOR THIS JOB. (IN WHICH                    20160300 T  0061:3
           CASE SHEETDIDDLER TURNED ON S[2].[1:1] AND CALLED SELECTION),                   20160400 T  0061:3
     OR 2) THE SUM OF THIS JOBS CORE REQUIREMENTS (S[20]) PLUS THE SUM                     20160500 T  0061:3
           OF THE CORE REQUIREMENTS OF ALL OTHER JOBS ACTUALLY RUNNING                     20160600 T  0061:3
           (CORE.[FF]) IS LESS THAN THE TOTAL AMOUNT OF CORE AVAILABLE                     20160700 T  0061:3
           FOR USER PROGRAMS (THE INITIAL SPACE AVAILABLE (CORE.[CF])                      20160800 T  0061:3
           TIMES THE MULTIPROCESSING FACTOR (CORE.[4:14])),                                20160900 T  0061:3
    OR 3) "LDCNTRL/DISK" IS BEING TESTED AND THE "CDONLY" OPTION IS SET                    20161000 T  0061:3
          OR                                                                               20161100 T  0061:3
          "PRNPBT/DISK" IS BEING TESTED AND THE "AUTOPRNT" OPTION IS SET                   20161200 T  0061:3
                                                                                           20161300 T  0061:3
          IF THE JOB BEING TESTED IS A "SYSTEM" JOB (LIBMAIN,LDCNTRL,                      20161400 T  0061:3
          PRNPBT) AND THE ABOVE CONDITIONS ARE NOT SATISFIED, THE                          20161500 T  0061:3
          THE APPARENT AMOUNT OF AVAILABLE CORE (AS SHOWN IN THE "CORE"                    20161600 T  0061:3
          WORD) IS TESTED USING A FACTOR OF 1.1 TIMES THE ACTUAL FACTOR                    20161700 T  0061:3
          IN ORDER TO ATTEMPT TO FORCE THESE JOBS IN.                                      20161800 T  0061:3
    END OF COMMENT;                                                                        20161900 T  0061:3
                                                                                           20162000 T  0061:3
    IF S[2].[8:10]=5 THEN % "RUN" JOB GETS SPECIAL HANDLING                                20162100 T  0061:3
$ SET OMIT = NOT(DATACOM AND RJE )                                                         20162300 T  0061:3
        BEGIN                                                                              20162400 T  0063:1
        TYPE := RUNING;                                                                    20162700 T  0063:1
        P(FSVALUE],STS);                                                                   20162800 T  0063:3
        SELECTRUN1;                                                                        20162900 T  0064:2
         IF TYPE LSS 0 THEN                                                                20163000 T  0065:1
             GO TO SW[TYPE:=ABS(TYPE)];                                                    20163100 T  0065:3
        END; % IF A "RUN" REQUEST                                                          20163200 T  0066:2
                                                                                           20163300 T  0071:3
         T:=S[20];  % USED UNTIL 20178900                                                             20162700
         IF (EST:=CORE.[CF]*CORE.[4:14]/100)<T THEN % ESTIMATE > TOTAL.                    20163600 T  0071:3
         IF EST>0 THEN T:=EST;                          % SET IT TO TOTAL.                20163700 T  0072:3
         L:=0;                                                                  %125-      20163800 T  0076:0
         IF NOMEM NEQ 0 THEN GO TO PASS;                                                   20163900 C  0078:2
         IF (S[2] LSS 0) OR (MCPJOB.[1:1]) THEN GO TO JARSPACE;                            20164000 T  0079:1
         % MCPJOB.[1:1]=1 MEANS RUN IT REGARDLESS OF CORE AVAILABILITY                    20164200 T  0081:0
         % S[2].[1:2] ::: [0=NORMAL, 1=NOT USED, 2=XS-ED, 3=ES-ED]                       20164300 T  0083:3
         IF (LEVEL GTR PASSLEVEL) THEN GO TO PASS;                              %140-      20164400 T  0083:3
$ SET OMIT = NOT(BREAKOUT)                                                      %140-      20164700 P  0083:3
$ SET OMIT = NOT(WORKSET)                                                                  20164750 C  0085:0
         IF (WKSETSTOPJOBS NEQ 0) OR WKSETNOSELECT THEN GO TO PASS;                        20165110 T  0085:0
$ POP OMIT % WORKSET                                                                       20165120 T  0085:0
         IF CORE.[FF]+T > (IF MCPJOB THEN EST*1.1 ELSE EST) THEN GO PASS;                  20165130 T  0088:0
         % AN ATTEMPT IS MADE TO RUN MCPJOBS EVEN WHEN CORE IS FULL BY                     20165300 T  0088:0
         % TESTING THEM AGAINST A VALUE 10% HIGHER.                                       20165400 T  0091:3
                                                                                           20165500 T  0092:1
                                                                                           20166800 T  0092:1
%      ***  *****  *****  *****  *****  *****  *****  *****                               20166900 T  0092:1
%       *   *   *  *   *  *      *   *  *   *  *      *                                   20167000 T  0092:1
```

```
%      *   *****  *****  *****  *****  *****  *      *****
%  *   *   *   *  *   *      *  *      *   *  *      *
%  *****   *   *  *   *  *****  *      *   *  *****  *****

JARSPACE:

    IDLETIME;
    % FIND A MIX SLOT FOR THIS JOB
    FOR MIX:=1 STEP 1 UNTIL MIXMAX DO
       IF JAR[MIX,*]=0 THEN GO LOAD;

    %  NO FREE SPACE IN JAR: PASS ENTRY WITHOUT DELINKING AND CONTINUE
    L:=2;
    GO TO PASS;

%   *      *****  *****  ****       ***  *****  *****
%   *      *   *  *   *  *   *       *   *   *  *   *
%   *      *   *  *****  *   *       *   *****  *****
%   *      *   *  *   *  *   *   *   *   *   *  *   *
%   *****  *****  *   *  ****     ****   *   *  *   *

LOAD:

    JARROW[MIX] := IOQUE & HDR[CTC];      % FILE HEADER BECOMES JAR ROW
    M[HDR-2],[9:6] := MIX; % PLACE MIX INDEX IN MEMORY LINK
    M[HDR-2],[3:6] := JARROWAREAV;                                    %167-
    CORE.[FF] := CORE.[FF] + T;           % ADD IN CORE ESTIMATE
 $ SET OMIT = NOT(PACKETS)
    IF(T:=S[23].[2:6]) GEQ 32 THEN PSEUDOMIX[MIX]:=1; % PSEUDO-RDR JOB
 $ POP OMIT % PACKETS
    JAR[MIX,0] := S[0];
    JAR[MIX,1] := S[1];
    JAR[MIX,2]:=S[2]&(IF (NT1:=S[2].[8:10])=5 THEN 2 ELSE NT1)[8:38:10];
    % IF THIS IS A "RUN" JOB, CHANGE IT TO SAY "EXECUTE"
    % JAR[MIX,2],[8:10] = SHEET[2],[8:10] =
    %     0 = "GO" PART OF COMPILE AND GO
    %     1 = COMPILE AND GO
    %     2 = EXECUTE
    %     3 = COMPILE FOR SYNTAX
    %     4 = COMPILE TO LIBRARY
    %     5 = RUN JOB
    STREAM(A:=JAR[MIX,3].[30:18], D:=[DT]); % CREATION DATE FROM HDR
       BEGIN
       S1:=LOC A; DS:=8DEC;
       END;

 $ SET OMIT = NOT(NEWLOGGING)
    PROCTIME[MIX] := -(JAR[MIX,3]:=S[16]); % PROCESS LIMIT            %127-
    IOTIME  [MIX] := -(JAR[MIX,4]:=S[17]); % I/O LIMIT               %127-
    STREAM(DATE, A:=[1]); % CONVERT DATE TO OCTAL FOR LOGGING
        BEGIN
        S1:=LOC DATE; DS:=8OCT;
        END;

    JAR[MIX,5]:=(XCLOCK+P(RTR)) & I[1:25:23]; % DATE AND TIME
    JAR[MIX,6] := S[6]&S[23][2:2:6]; % CARD/PSEUDO RDR, UNITNO IN [2:6]
    JAR[MIX,7] := 0; % IDLETIME ENTRY
```

```
20167100 T  0092:1
20167200 T  0092:1
20167300 T  0092:1
20167400 T  0092:1
20167500 T  0092:1
20167600 T  0092:1
20167650 T  0092:1
20167700 T  0092:3
20167800 T  0092:3
20167900 T  0095:0
20168000 T  0098:3
20168100 T  0098:3
20168150 T  0098:3
20168200 T  0099:2
20168700 T  0100:0
20168800 T  0100:0
20168900 T  0100:0
20169000 T  0100:0
20169100 T  0100:0
20169200 T  0100:0
20169300 T  0100:0
20169400 T  0100:0
20169500 T  0100:0
20169600 T  0100:0
20169800 T  0102:0
20169900 C  0105:1
20170600 T  0108:2
20170700 T  0110:3
20170800 T  0110:3
20170900 T  0114:2
20171000 T  0114:2
20171100 T  0116:2
20171200 T  0118:2
20171300 T  0123:2
20171400 T  0124:3
20171500 T  0124:3
20171600 T  0124:3
20171700 T  0124:3
20171800 T  0124:3
20171900 T  0124:3
20172000 T  0124:3
20172100 T  0124:3
20172200 T  0127:0
20172300 T  0127:0
20172400 T  0127:2
                    20172200
20172499 T  0127:3
20172600 P  0127:3
20172700 P  0131:0
20172800 T  0134:1
20172900 T  0135:1
20173000 T  0135:1
20173100 T  0135:3
                    20172900
20173200 T  0136:0
20173300 T  0139:1
20173800 T  0142:2
```

```
    JAR[MIX,9],[FF] := 0; % ZERO OUT "CHAIN" DISK ADDRESS FIELD                    20173900 T  0144:1
    % JAR[MIX,8] THROUGH JAR[MIX,29] STILL CONTAIN CONTENTS OF                     20174100 T  0146:3
    % OBJECT FILE HEADER AS OBTAINED ABOVE                                        20174200 T  0146:3
    JAR[MIX,9] := M[HDR INX 9],[CF] & MCPJOB[6:45:3] &                           20174300 T  0146:3
                  (S[2],[4:1] AND NOT(S[2],[2:1] OR AUTOMESS))[2:47:1];          20174400 T  0150:3
     % S[2],[4:1]=1 MEANS SUPPRESS BOJ/EOJ MESSAGES                              20174500 T  0155:2
     % MARK JAR[9] WITH JOB CODE (1,3 OR 5 FOR SYS JOB)                          20174600 T  0155:2
    % INSURE THAT THIS JOB HAS A UNIQUE STARTING TIME (FOR LOG)                   20174900 T  0155:2
TRYAGAIN:                                                                        20175000 T  0155:2
    FOR I:=1 STEP 1 UNTIL MIXMAX DO                                              20175100 T  0155:2
        BEGIN                                                                    20175200 T  0157:0
        IF JARROW[I] NEQ 0 THEN % JOB RUNNING HERE                               20175300 T  0157:0
        IF I NEQ MIX THEN % NOT OUR JOB                                          20175400 T  0158:0
        IF JAR[MIX,5],[24:24]=JAR[I,5],[24:24] THEN % SAME START TIME            20175500 T  0159:1
            BEGIN                                                                20175600 T  0163:0
            JAR[MIX,5],[24:24]:=JAR[MIX,5],[24:24]+1; % BUMP THE TIME            20175700 T  0163:2
            GO TRYAGAIN;                                                         20175800 T  0168:1
            END;                                                                 20175900 T  0168:3
                                                                                                20175600
        END;                                                                     20176000 T  0168:3
                                                                                            20175200
%                                                                        %127-   20176003 C  0171:0
%   *****  *****  *****     *****  *****  *****  *****                   %127-   20176006 C  0171:0
%   *      *      *           *    *      *   *  *   *                   %127-   20176009 C  0171:0
%   *****  *****  *  **       *    *****  *****  *   *                   %127-   20176012 C  0171:0
%       *  *      *   *      *     *      *  *   *   *                   %127-   20176015 C  0171:0
%   *****  *****  *****     *****  *****  *   *  *****                   %127-   20176018 C  0171:0
%                                                                        %127-   20176021 C  0171:0
    IF F NEQ 0 THEN % SHEET ENTRY PASSED AS A PARAMETER                  %127-   20176024 C  0171:0
        BEGIN                                                            %127-   20176027 C  0171:3
        IF SEG0 NEQ 0 THEN FORGETSPACE(SEG0);                            %127-   20176030 C  0172:1
        SEG0 := S & S[7][CTC]; % SEG. ZERO PRESENT AT CORE ADDR. "S[7]"  %127-   20176033 C  0174:3
        END                                                              %127-   20176036 C  0176:2
                                                                                            20176027
    ELSE                                                                 %127-   20176039 C  0176:2
        BEGIN                                                            %127-   20176042 C  0176:2
        IF SEG0 = 0 THEN %                                               %127-   20176045 C  0177:0
            M[(SEG0:=ARRAYDESC(30,SEGZEROAREAV)) INX NOT 1],AREAMIXF:=0; %       20176048 C  0178:0
        DISKWAIT(-(SEG0 INX 0),30,M[HDR INX 10]); % READ SEGMENT ZERO            20176054 C  0184:1
        END; % IF SEGMENT ZERO WAS NOT PRESENT                           %127-   20176057 C  0189:0
                                                                                            20176042
%                                                                        %127-   20176060 C  0189:0
%   *****  *****  *****  *****  *   *              *****  *****  *****   20176063 C  0189:0
%   *        *    *   *  *      * *        *       *   *  *   *   *     20176066 C  0189:0
%   *****    *    *****  *      ***      *****     *****  *****   *     20176069 C  0189:0
%       *    *    *   *  *      * *        *       *      * *     *     20176072 C  0189:0
%   *****    *    *   *  *****  *   *              *      *   *   *     20176075 C  0189:0
%                                                                        %127-   20176078 C  0189:0
    % S[21] CONTAINS STACK SIZE, SEG0[3] CONTAINS PRT SIZE               %127-   20176081 C  0189:0
    IF SEG0[3] GTR 0 THEN % NOT A RESTART JOB                            %127-   20176084 C  0189:0
        BEGIN                                                            %127-   20176087 C  0190:0
        NFO[(MIX-1)*NDX+2] := (STACKLOC:=GETSPACE %                      %167-   20176090 C  0190:2
            (SEG0[3] INX S[21] INX 64,STACKPRTAREAV,3))+2; %             %167-   20176093 C  0192:2
        IF STACKLOC = 0 THEN % NO MEMORY                                 %127-   20176096 C  0196:3
            BEGIN                                                        %127-   20176099 C  0197:2
NG:         JARROW[MIX] := L := 0; %                                     %127-   20176102 C  0198:0
            CORE.[FF] := CORE.[FF] - T; %                                %127-   20176105 C  0199:3
 $ SET OMIT = NOT(PACKETS)                                               %127-   20176117 C  0202:0
```

```
            PSEUDOMIX[MIX] := 0; %                                          %127-       20176120 C  0202:0
$ POP OMIT                                                                  %127-       20176123 C  0203:1
            GO TO PASS;                                                     %127-       20176126 C  0203:1
            END; % IF NO MEMORY                                             %127-       20176129 C  0203:3
                                                                                                        20176099
        IF NOT MCPJOB.[1:1] THEN % DON'T AUTO-START SYSJOB                  %127-       20176132 C  0203:3
        IF STACKLOC GEQ @50000 THEN                                         %127-       20176135 C  0204:3
            BEGIN % SAVE SPACE TO HIGH...                                   %127-       20176138 C  0206:0
            FORGETSPACE(STACKLOC+2); %                                      %127-       20176141 C  0206:2
            STACKLOC := 0; %                                                %127-       20176144 C  0207:3
            GO TO NG; %                                                     %127-       20176147 C  0208:2
            END;                                                            %127-       20176150 C  0210:0
                                                                                                        20176138
        END; % NOT RESTART                                                  %127-       20176153 C  0210:0
                                                                                                        20176087
%%% SEE ALSO "SEGMENT ZERO" SECTION IN PROCEDURE "SELECTRUN2" FOR                       20176200 T  0210:0
%%% FURTHER ALTERATIONS TO THE JAR.                                                    20176300 T  0210:0
                                                                                       20176400 T  0210:0
%    *****  *****  ****   *      *****  *****                                         20176500 T  0210:0
%      *    *   *  *   *  *      *      *                                             20176600 T  0210:0
%      *    *****  ****   *      *****  *****                                         20176700 T  0210:0
%      *    *   *  *   *  *      *          *                                         20176800 T  0210:0
%      *    *   *  ****   *****  *****  *****                                         20176900 T  0210:0
                                                                                       20177000 T  0210:0
 $ SET OMIT = NOT(STATISTICS)                                                          20177200 T  0210:0
    IF S[2].[2:1] OR (S[21] LSS 128) THEN S[21]:=128;                                  20178100 T  0210:0
    % S[2].[2:1]=1 WHEN ES-ED, S[21] CONTAINS STACK SIZE                               20178200 T  0214:0
    NFOR[(MIX-1)*NDX+2] := P(DUP,LOD) & T [CTF] & ((CLOCK+P(RTR)) % %127-              20178900 P  0214:0
        DIV 60) [1:31:17]; %                                                %127-       20178910 C  0217:3
    PRYOR[MIX]    := -1;                                                               20179100 T  0219:2
$ SET OMIT = NOT(WORKSET)                                                              20179210 T  0221:0
    OLAYTIME[MIX] := 0;                                                                20179220 T  0221:0
$ POP OMIT % WORKSET                                                                   20179230 T  0222:1
$ SET OMIT = NOT(DATACOM)                                                   %141-      20179610 C  0222:1
                                                                                       20179700 T  0222:1
                    %%%%%     %      %%%%%     %%%    %    %                          20179800 T  0222:1
                    %    %    %%     %   %   %     %      % %                           20179900 T  0222:1
    P1MIX:=MIX;     %%%%%     %     %   %   %     %       %                            20180000 T  0222:1
                    %         %     %   %   %     %      % %                           20180100 T  0223:0
                    %        %%%    %   %   %    %%%    %    %                         20180200 T  0223:0
                                                                                       20180300 T  0223:0
    STARTLOG(P1MIX); % BEGIN LOGGING FOR THIS MIX                           %127-      20180350 C  0223:0
    USERCODE[MIX]:=ABS(S[24]); % USERCODE IN S[24]                                     20180400 T  0225:2
    CHANGEABORT(S[6]);                                                                 20180600 T  0227:1
    IF S[2].[8:10]=0 THEN FORGETESPDISK(S[25]); % FORGET OBJ,SKELETON                  20180800 T  0228:1
     % S[2].[8:10]=0 FOR "GO" PART OF "COMPILE AND GO"                                 20180900 T  0231:1
    STREAM(Q:=FSROW[MIX]:=SAVEARRAYDESC(4,FSAREAV));                        %167-      20181000 P  0231:1
          DS:=32LIT"0";                                                                20181100 T  0236:0
$ SET OMIT = NOT(AUXMEM)                                                               20185300 T  0240:2
                                                                                       20185700 T  0240:2
    TYPE := CONTINUEING;                                                               20185800 T  0240:2
                                                                                       20185900 T  0241:1
    % SELECTRUN2 IS CONCERNED WITH:                                                    20186000 T  0241:1
    %   BOJ MESSAGE                                                                    20186100 T  0241:1
    %   SEGMENT ZERO                                                                   20186200 T  0241:1
    %   STACK AND PRT                                                                  20186300 T  0241:1
    %   SEGMENT DICTIONARY                                                             20186400 T  0241:1
```

```
        %   DALOC
        %   COMMON

        P(.SVALUE],STS);
        SELECTRUN2;
        IF TYPE LSS 0 THEN
            GO TO SW[TYPE:=ABS(TYPE)];

        IF (SEGO[7],[CF]=0) THEN % BUILD A DUMMY FILE PARAMETER BLOCK
              TRP[3]:=[M[GETSPACE(1,FPBAREAV,1)+2]] ELSE%                    %167-
            BEGIN
            TYPE := EQUATING; % BUILD FPB AND PROCESS LABEL EQUATION
            P(.SVALUE],STS);
            SELECTRUN1;
                IF TYPE.[1:1] THEN GO TO SW[TYPE:=ABS(TYPE)];
            END;


        NFO.(MIX-1)*NDX] := TRP[3];
        % TRP[3] VALUE SET BY SELECTRUN1 FOR NON-MCP TYPE JOB
        GO TO WINDUP;

    PASS:

        TYPE := PASSING;
        P(.SVALUE],STS);
        SELECTRUN1;
        IF TYPE LSS 0 THEN
            GO TO SW[TYPE:=ABS(TYPE)]; % SELECTRUN1 DETERMINES BRANCH POINT

    WINDUP:

    %      ***    **  *    ***    *****         ***   *****   ****
    %       *     **  *     *       *            *    *   *   *   *
    %       *     * * *     *       *            *    *   *   ****
    %       *     *  **     *       *          * *    *   *   *   *
    %      ***    *  **    ***      * 0       ****    *****   ****

     $ SET OMIT = NOT(WORKSET)
       WKSETSWITCHTIME := CLOCK + P(RTR); % TIME OF LAST SELECTION
     $ POP OMIT % WORKSET
       %   INITIALIZE OTHER PRT CELLS
       TRP.0]  := WORDOFEASE;
       TRP.2]  := MEMORY;
       TRP.10] := TRP&(STACKLOC+1)[18:33:15];
       IF JAR[MIX,0] LSS 0 THEN % COMPILE JOB
           BEGIN
           IF(NT1:=JAR[MIX,2].[8:10])=4 THEN % COMPILE TO LIBRARY
           TRP.@26]:=S[22] % SAVE FACTOR FOR OBJECT FILE IN SHEET[22]
           ELSE IF NT1=3 THEN % COMPILE FOR SYNTAX ONLY
               BEGIN
               TRP.@26]:=-1; % SAVE FACTOR = (-1) % DONT SAVE OBJECT
               JAR[MIX,2].[8:10]:=2; % MARK IT AN "EXECUTE" JOB
               END;

           END; % COMPILE JOBS

       TRP.6]:=FLAG(0&[TRP[6]][18:33:15]&32[8:38:10]);
```

```
20186500 T  0241:1
20186600 T  0241:1
20186700 T  0241:1
20186800 T  0241:1
20186900 T  0242:0
20187000 T  0242:2
20187100 T  0243:1
20187200 T  0248:2
20187300 T  0248:2
20187400 P  0250:0
20187500 T  0253:3
20187600 T  0254:1
20187700 T  0255:0
20187800 T  0255:3
20187900 T  0256:1
20188000 T  0262:1
                   20187500
20188100 T  0262:1
20188600 T  0262:1
20188800 T  0264:3
20188900 T  0264:3
20189000 T  0265:1
20189100 T  0265:1
20189200 T  0265:1
20189300 T  0265:1
20189400 T  0266:0
20189500 T  0266:3
20189600 T  0267:1
20189700 T  0268:0
20189800 T  0273:1
20189900 T  0273:1
20190000 T  0273:1
20190100 T  0273:1
20190200 T  0273:1
20190300 T  0273:1
20190400 T  0273:1
20190500 T  0273:1
20190600 T  0273:1
20190610 T  0273:1
20190620 T  0273:1
20190630 T  0275:0
20190700 T  0275:0
20190800 T  0275:0
20190900 T  0276:1
20191000 T  0277:2
20191100 T  0280:0
20191200 T  0281:2
20191300 T  0282:0
20191400 T  0284:2
20191500 T  0285:3
20191600 T  0288:3
20191700 T  0289:1
20191800 T  0290:3
20191900 T  0293:3
                   20191600
20192000 T  0293:3
                   20191200
20192100 T  0293:3
```

```
IF JAR[MIX,2] GEQ 0 THEN % NOT COBOL                                                20192200 T  0297:0
   TRP[11]:=FLAG(0&[TRP[11]][18:33:15]&8[8:38:10]); % "OAT" ENTRY                   20192300 T  0298:2
%   BRING IN STARTING SEGMENT&BUILD CONTROL WORDS FOR INITIATE%                     20192400 T  0302:1
MAKEPRESENT(TRP INX POLISH(SEG0[6],TRP[4],INX,LOD),[8:10]);                         20192500 T  0302:1
% SEG0[6] = STARTING SEGMENT NUMBER                                                20192600 T  0305:2
% SEGDICT[SEG0[6]].[8:10] = PRT LOCN. OF DESC. FOR STARTING SEGMENT               20192700 T  0305:2
M[STACKLOC+2]:= -FLAG(POLISH(SEG0[6],TRP[4],INX,LOD),[18:15]);                      20192800 T  0305:2
M[STACKLOC+1]:= -FLAG(0&(TRP)[6:33:9]);                                             20192900 T  0309:3
M[STACKLOC]  := @2222222222222222;                                                  20193000 T  0313:2
TRP[8]       := -FLAG(STACKLOC+2); % INITIATE CONTROL WORD                          20193100 T  0315:0
IF(NT1:=TRP[4].[18:6]) NEQ 0 THEN                                                   20193200 T  0317:1
INTABLEROW[MIX]:=INTABLEROW[NT1]                                                    20193300 T  0319:1
ELSE IF NOT(JAR[MIX,9].SYSJOBF) THEN  % NOT "SYSTEM" JOB                            20193400 T  0320:2
    BEGIN                                                                           20193500 T  0324:3
    I:=INTSIZE;                                                                     20194100 T  0325:1
    INTABLEROW[MIX]:=[M[GETSPACE(I,1,1)+2]]&I[8:38:10];                             20194300 T  0326:0
    STREAM(A:=I,T:=INTABLEROW[MIX]);                                                20194400 T  0330:1
        BEGIN                                                                       20194500 T  0331:2
        SI:=T; SI:=SI-8; DS:=A WDS;                                                 20194600 T  0331:2
        END;                                                                        20194700 T  0332:2
                                                                                                    20194500
    END;                                                                            20194800 T  0332:3
                                                                                                    20193500
                                                                                    20194900 T  0332:3
                                                                                    20195000 T  0332:3
IF S[2].[2:1] THEN % S[2].[2:1]=1 WHEN ES=ED. CALL TERMINATE                        20195100 T  0332:3
    BEGIN                                                                           20195200 T  0333:3
    JAR[MIX,2].[2:1]:=1; % MARK IT TERMINATED                                       20195400 T  0334:1
    TERMINATE(MIX &                                                                 20195500 T  0337:1
              (IF JAR[MIX,2].[7:1] AND (*P(TSX INX TRP)).PBIT THEN                  20195600 P  0337:3
               90 ELSE 35)[CTF]);                                                   20195700 T  0341:1
    END                                                                             20196300 T  0343:1
                                                                                                    20195200
    ELSE                                                                            20196400 T  0343:1
    IF JAR[MIX,2].[7:1] THEN          % TASK WHOSE PARENT HAS                    20196500 T  0343:1
    IF (TSKA:=*P(TSX INX TRP)).PBIT THEN % DECLARED TASK ARRAY      %110-           20196600 P  0345:1
        BEGIN                                                                       20196700 T  0348:0
        TSKA[1] := JAR[MIX,0];                                                      20196800 T  0348:2
        TSKA[2] := JAR[MIX,1];                                                      20196900 T  0350:2
        TSKA[3] := 2; % STATUS: ACTIVE                                              20197000 T  0352:2
        TSKA[4] := MIX;                                                             20197100 T  0353:3
        END;                                                                        20197200 T  0355:0
                                                                                                    20196700
 $ SET OMIT = NOT(NEWLOGGING)                                                       20197300 T  0355:0
    SAVEMIX(MIX);                                                                   20197600 T  0355:0
    PRYOR[MIX] := S[18]; % PRIORITY IN SHEET[18];                                   20198500 T  0355:3
    IF E=0 THEN % SHEET ENTRY NOT PASSED AS A PARAMETER                             20199200 T  0357:1
        BEGIN                                                                       20199300 T  0358:0
        TYPE := (IF S[2].[1:1] THEN STARTING ELSE CONTINUEING);                     20199400 T  0358:2
        % IF ES=ED THEN RE-START SHEET SEARCH; OTHERWISE.CONTINUE ON               20199500 T  0361:2
        GO TO START;                                                                20199600 T  0361:2
        END;                                                                        20199700 T  0363:0
                                                                                                    20199300
                                                                                    20199800 T  0363:0
QUIT:                                                                               20210000 T  0363:0
                                                                                    20210100 T  0363:0
    PIMIX := 0;                                                                     20210200 T  0363:0
```

```
IF SHEETLOCKED THEN UNLOCKTOG(SHEETMASK);                                  20210300 T  0363:3
                                                                                      20210300
IF S NEQ 0 THEN FORGETSPACE(S);        % SPACE FOR SHEET ENTRY              20210400 T  0368:0
IF SEG0 NEQ 0 THEN FORGETSPACE(SEG0); % SPACE FOR SEGMENT ZERO             20210500 T  0370:2
IF OLAYDISK NEQ 0 THEN FORGETUSERDISK(OLAYDISK,-500);                      20210600 T  0373:0
IF LBL NEQ 0 THEN FORGETSPACE(LBL);    % SPACE FOR LABEL EQN.ENTRIES       20210700 T  0375:2
KILL([MSCW]);                                                              20211400 T  0378:0
END SELECTION ROUTINE;                                                     20211600 T  0378:3
                                                                                      20140900
                                                                                SIZE= 0379 WORDS
```

```
                DEFINE%
                     COMMA      = 10#,%                                                    20212000 T  0000:0
                     EQUAL      = 11#,%                                                    20213000 T  0000:0
                     PERIO      = 12#,%                                                    20214000 T  0000:0
                     SLASH      = 13#,%                                                    20215000 T  0000:0
                     QUEST      = 14#,%                                                    20216000 T  0000:0
                     POUND      = 15#,%                                                    20217000 T  0000:0
                                                                              %LP 1         20217500 T  0000:0
                     RB         = 16#,% RIGHT BRACKET FOR EXCEPT LIST                      20217600 T  0000:0
                     LB         = 17#,%  LEFT    "     "    "     "                       20217700 T  0000:0
                     SPECI      = 19#,%                                                    20218000 T  0000:0
                     IDENT      = 20#,%                                                    20219000 T  0000:0
                     UNLOCKV    = 21#,% A SWITCH LABEL (FUNC) IN                           20219050 T  0000:0
                     USEV       = 22#,% SECURITYMAINT USES THE ORDER OF                    20219060 T  0000:0
                     LOCKV      = 23#,% VALUES OF "UNLOCKV" THROUGH "OPEN".                20219100 T  0000:0
                     FREE       = 24#,                                                     20219200 T  0000:0
                     OPEN       = 25#,                                                     20219300 T  0000:0
                     PACKET     = 26#,                                                     20219310 T  0000:0
                     USER       = 27#,                                                     20219400 T  0000:0
                     RUNV       = 28#,                                                     20219500 T  0000:0
                     COMPI      = 29#,                                                     20220000 T  0000:0
                     EXECU      = 30#,                                                     20221000 T  0000:0
                     COPYN      = 31#,                                                     20221500 T  0000:0
                     DUMP       = 32#,                                                     20222000 T  0000:0
                     UNLOAD     = 33#,                                                     20223000 T  0000:0
                     ADDV       = 34#,                                                     20224000 T  0000:0
                     LOAD       = 35#,                                                     20224500 T  0000:0
                     REMOV      = 36#,                                                     20225000 T  0000:0
                     CHANG      = 37#,                                                     20225500 T  0000:0
                     ENDFI      = 39#,%                                                    20226000 T  0000:0
                $ SET OMIT = NOT(PACKETS)                                               20226099 T  0000:0
                     WAITV      = 40#,%                                                    20226100 T  0000:0
                $ POP OMIT                                                              20226101 T  0000:0
                     DATAV      = 41#,%                                                    20226500 T  0000:0
                     LAREV      = 42#,%                                                    20227000 T  0000:0
                     SETV       = 43#,%                                                    20228000 T  0000:0
                     RESETV     = 44#,%                                                    20228100 T  0000:0
                     FILEV      = 47#,%                                             -      20228200 P  0000:0
                     EXPIRED    = 48#,%                                             -      20228300 P  0000:0
                     ACCESSD    = 49#,%                                             -      20228400 P  0000:0
                     PROCF      = 50#,% A STORE NEAR THE END OF PCC                        20229000 T  0000:0
                     IO         = 51#,%  MAKES USE OF THE ORDER AND VALUES                 20230000 T  0000:0
                     PRIOR      = 52#,%  OF "PROCE" THRU "SAVEV".                          20231000 T  0000:0
                     COMMONV    = 53#,%                                                    20232000 T  0000:0
                     COREV      = 54#,%                                                    20232500 T  0000:0
                     STACK      = 55#,%                                                    20233000 T  0000:0
                     SAVEV      = 56#,%  (SAVE #DAYS ON COMPILE TO LIBRARY)                20233500 T  0000:0
                     ALGOL      = 60#,%                                                    20234000 T  0000:0
                     FORTRAN    = 62#,%                                             -      20235000 P  0000:0
                     TSPOL      = 63#,%                                             -      20235050 P  0000:0
                     BASIC      = 64#,%                                                    20235075 T  0000:0
                     COBOL68    = 65#,%                                             -      20235080 P  0000:0
                     WITH       = 66#,%                                             -      20235099 P  0000:0
                     COBOL      = 67#,%                                             -      20235100 P  0000:0
                     LIBRA      = 68#,%                                                    20236000 T  0000:0
                     SYNTA      = 69#,%                                                    20237000 T  0000:0
                     FROM       = 70#,%                                                    20238000 T  0000:0
                     TOV        = 71#,%                                                    20239000 T  0000:0
```

```
                ONV         = 72#,%                                          %148-        20239100 C  0000:0
                 FORM         = 75#,% SWITCH D(PCC)"FORM"-"SPECIAL"          %846-        20240000 P  0000:0
            LINES66           = 77#, % 66 LINES PER PAGE                     %724-        20240020 C  0000:0
                NO          = 79#,%                                                       20241000 T  0000:0
                DISK        = 80#,%                                                       20242000 T  0000:0
                TAPE        = 81#,%                                                       20243000 T  0000:0
                PUNCH       = 82#,%                                                       20244000 T  0000:0
                PRINT       = 83#,%                                                       20245000 T  0000:0
                BACK        = 85#,%                                                       20246000 T  0000:0
                SPECIAL     = 90#,                                                        20247000 T  0000:0
                REMOTE      = 89#,                                                        20247500 T  0000:0
                EU          = 91#,%                                          -            20247600 P  0000:0
                SLOW        = 92#,%                                          -            20247700 P  0000:0
                B6500       = 93#,%                                          -            20247800 P  0000:0
                FAST        = 94#,                                                        20247900 T  0000:0
                MAXV        = 96#,                                                        20247920 T  0000:0
                FREEF       = 97#,%                                          -            20247930 P  0000:0
                FIXED       = 98#,                                                        20247940 T  0000:0
                SENSE       = 100#,                                                       20247950 T  0000:0
                LATESTV     = 101#,                                                       20247960 T  0000:0
                EXCEPT      = 102#,                                                       20247970 T  0000:0
                AS          = 103#,                                                       20247980 T  0000:0
                NOHASH      = 104#,                                                       20247990 T  0000:0
                PAPER       = 84#;%                                                       20248000 T  0000:0
COMMENT  RESWDS CONTAINS RESERVED WORDS FOR CONTROL CARDS;%                               20249000 T  0000:0
DEFINE DECLAREDCVARIABLES =                                                               20288000 T  0000:0
REAL        MSCW        = -2,                                                         20288100 T  0000:0
            CARD        = MSCW+1,       MYMSCW      = CARD,                           20288105 T  0000:0
            RCW         = +0,                                                         20288110 T  0000:0
            PROCVAL     = RCW+1,   %IN CASE OF TYPED PROCEDURES                       20288115 T  0000:0
            A           = PROCVAL+1,    T           = A,                              20288120 T  0000:0
            CADDR       = A+1,          SFID        = CADDR,                          20288125 T  0000:0
            CARDLOC     = CADDR+1,                                                    20288130 T  0000:0
            CDEX        = CARDLOC+1,    SDEX        = CDEX,                           20288135 T  0000:0
            CMPLR       = CDEX+1,                                                     20288140 T  0000:0
            CN          = CMPLR+1,                                                    20288150 T  0000:0
            KOUNT       = CN+1,                                                       20288155 T  0000:0
            LASTSCAN    = KOUNT+1,                                                    20288165 T  0000:0
            LIBNO       = LASTSCAN+1,                                                 20288170 T  0000:0
            N1          = LIBNO+1,                                                    20288175 T  0000:0
            N2          = N1+1,                                                       20288185 T  0000:0
            N3          = N2+1,                                                       20288190 T  0000:0
            N4          = N3+1,         U           = N4,                             20288195 T  0000:0
            OPTN        = N4+1,                                                       20288200 T  0000:0
            OPTNN       = OPTN+1,                                                     20288205 T  0000:0
            PADDR       = OPTNN+1,      SFH         = PADDR,                          20288210 T  0000:0
            PDEX        = PADDR+1,      SMID        = PDEX,                           20288215 T  0000:0
            PPCPROCESS  = PDEX+1,                                                     20288220 T  0000:0
            SOURCE      = PPCPROCESS+1,                                               20288225 T  0000:0
            SPOUTUNIT   = SOURCE+1,                                                   20288240 T  0000:0
            ST          = SPOUTUNIT+1,                                                20288245 T  0000:0
            T1          = ST+1,                                                       20288250 T  0000:0
            UNITNO      = T1+1,                                                       20288255 T  0000:0
            USERID      = UNITNO+1;                                                   20288260 T  0000:0
ARRAY       ACCUM       = USERID+1[*],                                                20288265 T  0000:0
            CEQN        = ACCUM+1[*],                                                 20288270 T  0000:0
            CMM         = CEQN+1[*],                                                  20288275 T  0000:0
```

```
                    DIRECT      =  CMM+1[*],                                                    20288280 T  0000:0
                    PEQN        =  DIRECT+1[*],                                                 20288285 T  0000:0
                    PROG        =  PEQN+1[*];                                                   20288295 T  0000:0
               NAME BOOLEAN ADDR  =  PROG+1;                                                   20288300 T  0000:0
               BOOLEAN ABORT      =  ADDR+1,                                                   20288305 T  0000:0
                    TOG           =  ABORT+1;                                                  20288310 T  0000:0
               REAL RETURNMSCW    =  TOG+1,          % THESE LOCALS MUST BE THE LAST            20288315 T  0000:0
                    RETURNRCW     =  RETURNMSCW+1,   % THREE LOCALS OF CONTROLCARD             20288320 T  0000:0
                    RETURNVAL     =  RETURNRCW+1                                               20288325 T  0000:0
               #;                                                                              20288900 T  0000:0
                                                                                               20289000 T  0000:0
                $ SET OMIT = NOT(PACKETS)                                                      20289009 T  0000:0
               PROCEDURE PRINTTHECOVER(CARD,UNITNO,PS);                                        20289010 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00617
PRT(646) = PRINTTHECOVER
                  VALUE CARD,UNITNO,PS; REAL CARD,UNITNO,PS;                                   20289020 T  0000:0
                  % TO ALTER SIZE OF ONE-AREA PACKET PAGE CHANGE DEFINE AT 02113091             20289025 T  0000:0
                  BEGIN LABEL TRYAGAIN;                                          %178-         20289030 P  0000:0
                        REAL BUF,T,TP,X;                                                       20289035 T  0000:0
STACK(F+1) = BUF
STACK(F+2) = T
STACK(F+3) = TP
STACK(F+4) = X
                        INTEGER I,PAGEADDR; ARRAY HEADER[*];                                   20289040 T  0000:0
STACK(F+5) = I
STACK(F+6) = PAGEADDR
STACK(F+7) = HEADER
                    SUBROUTINE BUILDHEADER;                                                    20289045 T  0000:0
                    BEGIN                                                                      20289050 T  0001:0
                    HEADER:=IOQUE & BUF[CTC];                                                  20289055 T  0001:0
                    M[BUF]:=0;                                                                 20289060 T  0002:2
                    MOVE(29,BUF,BUF+1);                                                        20289065 T  0004:0
                    STREAM(DATE,H3:=HEADER INX 3);                                             20289080 T  0006:0
                       BEGIN SI:=LOC DATE; DS:=8OCT;      % CREATION                          20289085 T  0007:3
                             DI:=H3; DS:="2LIT"+#";       % SAVE 10                           20289090 T  0008:1
                             SI:=H3; SI:=SI+5; DS:=3CHR;  % ACCESSED                         20289095 T  0009:0
                       END;                                                                    20289100 T  0009:3
                                                                                                          20289085
                    HEADER[0]:=@0013200132000103; % 90,90,1,3                                 20289105 T  0010:0
                    HEADER[1]:=(XCLOCK+P(RTR)) & HEADER[3][6:30:18];                           20289110 T  0011:1
                    HEADER[2]:=HEADER[5]:=MCP.[6:42];                              %131-       20289113 P  0014:1
                    HEADER[4]:=0&(@1001)[2:38:10]&SYSNO[4:46:2];                   %112-       20289115 P  0018:2
             $ SET OMIT = NOT(DATACOM AND RJE) OR OMIT                                         20289117 T  0021:3
                    HEADER[7]:=(PAGESIZE DIV 3)-1;                                             20289120 T  0021:3
                    HEADER[8]:=PAGESIZE;                                                       20289125 T  0024:0
                    HEADER[9]:=1;                                                              20289130 T  0025:1
                    HEADER[10]:=PAGEADDR;                                                      20289135 T  0026:2
                    END BUILDHEADER;                                                           20289140 T  0027:3
                                                                                                          20289050
TRYAGAIN:
                    CIDTABLE[UNITNO-32,6]:=TP:= 001 & NEXTCDNUM(1)[6:24:24];                   20289142 T  0029:0
                    IF DIRECTORYSEARCH(="PBD     ",TP,5)#0 THEN GO TRYAGAIN;                   20289144 T  0030:3
                    BUF:=SPACE(90);                                                            20289146 T  0035:0
                    PAGEADDR:=GETUSERDISK(PAGESIZE);                                           20289148 T  0037:2
                    PS:=IF CARD.[9:9]=0 THEN                                                   20289150 T  0039:3
                        IF PS=0 THEN "CRA" ELSE IF PS=1 THEN "CRB" ELSE                        20289152 T  0041:1
                        IF PS=2 THEN TINU[UNITNO],[30:18] ELSE                                 20289153 T  0042:2
                                                                                               20289154 T  0047:0
```

```
        IF PS=3 THEN "ZIP" ELSE "   " ELSE                                          20289155 T  0049:3
$ SET OMIT = NOT(DATACOM AND RJE) OR OMIT                                           20289156 T  0052:2
        "   ";                                                                      20289159 T  0052:2
      STREAM(CARD,TP:=CIDTABLE[UNITNO-32,2],PS                                      20289160 T  0053:1
                , N:=CIDTABLE[UNITNO-32,7]+1,BUF);                                  20289163 T  0055:1
      BEGIN DS:=8LIT" "; SI:=BUF; 2(DS:=44 WDS);                                    20289165 T  0058:0
            SI:=LOC N; DI:=LOC N; DS:=8DEC; DI:=LOC N; DS:=8FILL;                   20289170 T  0060:1
            SI:=LOC N; SI:=SI+3; DI:=BUF; DI:=DI+12;                                20289175 T  0061:2
            DS:=7LIT"INPUT  "; DS:=5CHR; DS:=12LIT" CARDS FROM ";                   20289180 T  0062:2
            SI:=LOC PS; SI:=SI+5; DS:=3CHR;                                         20289185 T  0065:3
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥14000"; BUF:=DI;                     20289190 T  0066:2
            SI:=LOC TP; SI:=SI+2; DI:=DI+12;                                        20289195 T  0069:0
            DS:=8LIT"PACKET  "; DS:=4CHR; DI:=DI-4; DS:=3FILL;                      20289200 T  0069:3
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥14000"; BUF:=DI;                     20289205 T  0071:3
            SI:=CARD; DS:=9WDS;                                                     20289210 T  0074:1
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥12000"; BUF:=DI;                     20289215 T  0074:3
            54(DS:="#"); DS:=11LIT"  ABORTED  "; 55(DS:="#");                       20289220 T  0077:1
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥12000"; BUF:=DI;                     20289225 T  0081:0
            DS:=16LIT"+ABORTED0PAGE   "; DS:=9LIT"0PACKET 0";                       20289230 T  0083:2
            SI:=LOC TP; SI:=SI+2; DS:=4CHR; DI:=DI+3;                               20289235 T  0087:1
            SI:=CARD; DS:=9 WDS;                                        %131-       20289240 P  0088:1
            40(DS:="0");                                                            20289245 T  0088:3
      END;                                                                          20289250 T  0089:3
                                                                                                    20289165
      M[BUF+87]:=MCP;                                                   %131-       20289252 C  0090:0
      DISKWAIT(BUF,90,PAGEADDR);                                                    20289255 T  0092:3
      STREAM(A:=I:=((NT1:=((XCLOCK+P(RTR)) DIV 3600)) MOD 60                        20289260 T  0094:0
                  +(NT1 DIV 60)×100),DATE,WEEKDAY,ACTDATE,BUF);                     20289265 T  0096:0
      BEGIN                                                                         20289270 T  0099:3
            3(4(DI:=DI+34); DS:=8LIT"!x0x2000"); BUF:=DI;                           20289275 T  0099:3
            DS:=8LIT" "; SI:=BUF; DS:=34 WDS; DI:=BUF;                              20289280 T  0102:2
            SI:=LOC DATE; DI:=DI+12; DS:=4LIT"DATE"; DI:=DI+3;                      20289285 T  0104:2
            SI:=SI+3; DS:=5CHR; DI:=DI+1;                                           20289287 T  0106:0
            SI:=SI+2; 6(IF SC=" " THEN SI:=SI+1 ELSE DS:=CHR);                      20289290 T  0106:3
            SI:=LOC ACTDATE; DS:=5LIT"DAY, ";                                       20289295 T  0108:3
            SI:=SI+2; 2(DS:=2CHR; DS:=LIT"/"); DS:=2 CHR;                           20289300 T  0110:0
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥14000"; BUF:=DI;                     20289305 T  0111:3
            SI:=LOC A; DI:=DI+12; DS:=4LIT"TIME"; DI:=DI+4; DS:=4DEC;               20289310 T  0114:1
            DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥14000";                              20289315 T  0116:0
      END;                                                                          20289320 T  0118:1
                                                                                                    20289270
      DISKWAIT(BUF,90,PAGEADDR+3);                                                  20289325 T  0118:2
      X:=6; M[BUF+17]:=0;                                               %178-       20289335 P  0120:1
      IF (T:=DIRECTORYSEARCH("MESSAGE","OTHEDAY",5))≠0 THEN                         20289340 T  0123:0
      BEGIN                                                                         20289345 T  0125:1
            FOR I:=0 STEP 1 WHILE (I<6) AND NOT M[BUF+17] DO                        20289350 T  0125:3
            BEGIN                                                                   20289355 T  0131:3
                  DISKWAIT(-BUF,90,M[T+10]+3×I);                                    20289360 T  0131:3
                  DISKWAIT(BUF,90,PAGEADDR+6+3×I);                                  20289365 T  0135:2
                  X:=X+3;                                                           20289370 T  0138:1
            END;                                                                    20289375 T  0139:2
                                                                                                    20289355
            FORGETSPACE(T);                                                         20289380 T  0148:0
      END;                                                                          20289385 T  0148:3
                                                                                                    20289345
      STREAM(ML:=MARKLEVEL,PL:=PATCHLEVEL,LL:=LOCALEVEL                             20289390 T  0148:3
                  ,IL:=M[3],BUF:=BUF+54);                                           20289395 T  0149:3
```

```
BEGIN DS:=8LIT" "; SI:=BUF; DS:=34 WDS; DI:=BUF;                                20289400 T  0151:3
      DI:=DI-8; DS:=8LIT"!x000803";                                             20289405 T  0153:3
      DI:=DI+12; DS:=18LIT"#NO MESSAGES TODAY";                                 20289410 T  0155:1
      DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥12002"; BUF:=DI;                       20289415 T  0158:0
      DI:=DI+8; DS:=31LIT"*** BURROUGHS B5700 DCMCP MARK ";                     20289420 T  0160:2
      SI:=LOC ML; IF SC GEQ " " THEN;                                           20289425 T  0165:0
      8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                     20289430 T  0165:3
        ELSE DS:=CHR); DS:=LIT",";                                              20289435 T  0167:2
      SI:=LOC PL; IF SC GEQ " " THEN;                                           20289440 T  0168:3
      6(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                     20289445 T  0169:2
        ELSE DS:=CHR); DS:=2CHR;                                                20289450 T  0171:1
      SI:=LOC LL; IF SC GEQ " " THEN;                                           20289455 T  0172:1
      8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                     20289460 T  0173:0
        ELSE DS:=CHR); DS:=21LIT" AND INTRINSICS MARK ";                        20289465 T  0174:3
      SI:=LOC ML; IF SC GEQ " " THEN;                                           20289470 T  0178:2
      8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                     20289475 T  0179:1
        ELSE DS:=CHR); DS:=LIT",";                                              20289480 T  0181:0
      SI:=LOC IL; SI:=SI+1; IF SC>"0" THEN DS:=CHR ELSE                         20289485 T  0182:1
      SI:=SI+1; DS:=2CHR; DS:=4LIT" ***";                                       20289490 T  0183:3
      DI:=BUF; 4(DI:=DI+34); DS:=8LIT"!x≥12001";                                20289495 T  0185:0
END;                                                                            20289500 T  0187:1
                                                                                              20289400
DISKWAIT(BUF,90,PAGEADDR+X);                                                    20289510 T  0187:2
BUILDHEADER;                                                                    20289520 T  0189:1
ENTERUSERFILE("PBD     ",TP,BUF-1);                                             20289530 T  0190:0
PSEUDO[UNITNO-32]:=(*P(DUP))&                                                   20289540 T  0192:0
                   11[8:38:10]& % PACKETPBD                                     20289550 T  0193:2
                   (IF T≠0 THEN 3 ELSE 2)[18:45:3]& % PACKETREC                 20289560 T  0194:2
                   1[21:47:1]& % PACKETFREE                                     20289570 T  0197:2
                   (PAGEADDR+X)[22:22:26]; % PACKETPAGE                        20289580 T  0198:2
    FORGETSPACE(BUF);                                                           20289590 T  0200:2
END PRINTTHECOVER;                                                              20289600 T  0201:1
                                                                                              20289030
                                                                                SIZE= 0205 WORDS
```

```
                $ POP OMIT
               COMMENT  FETCH READS THE NEXT CONTROL CARD  ,  SETS SOURCE TO BEGINNING
                        OF CARD , SETS LAST WORD OF CARD TO PERIOD.      ;%
                   PROCEDURE FETCH(UNITNO,CARDLOC,SOURCE);
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00624
PRT(647) = FETCH
                        VALUE UNITNO,CARDLOC;
                        REAL  UNITNO,CARDLOC,SOURCE ;
                   BEGIN%
                        REAL T,E;
STACK(F+1) = T
STACK(F+2) = E
                        E:=@14&UNITNO[45:1:1]; UNITNO:=ABS(UNITNO);
                   IF (UNITNO OR 1)=31 THEN % DCOM OR ZIP
                     M[SOURCE:=CARDLOC]:=@1425452432373737
                   ELSE
                     BEGIN   % NOT DCOM
               $ SET OMIT = PACKETS
               $ SET OMIT = NOT(PACKETS)
                         IF UNITNO GEQ 32 THEN
                         DO UNTIL NOT E.[45:1] OR T:=
               $ POP OMIT
                              READEMFROMDISK(CIDROW[UNITNO-32],%
                                   [M[CARDLOC]]&10[8:38:10]) ELSE%
                    DO BEGIN T+

                         WAITIO(CARDLOC INX @40000000,E,UNITNO);
                         IF UNITNO=30 OR T.[45:1] THEN
                         STREAM(Q+12,CARDLOC);
                         BEGIN SI+LOC Q;SI+SI+7;DS+CHR;DS+4 LIT "END." END;

                    IF UNITNO=25 THEN
                    BEGIN
                    STREAM(T+0:CARDLOC);%
                    BEGIN SI+CARDLOC;DI+LOC T;DI+DI+6;SI+SI-1;DS+2CHR;SI+SI-1;
                         DI+CARDLOC;DI+DI-1;DS+LIT"<";8(60(IF SC="+" THEN
                         BEGIN DS+CHR;JUMP OUT 2 TO L END;IF SC="<" THEN

                         BEGIN DI+DI-1;IF SC≠DC THEN DI+DI-1 END ELSE

                         DS+CHR));
                    L:   DI+CARDLOC;DI+DI-1;SI+LOC T;SI+SI+6;DS+CHR;
                    END;

                    END ELSE P(0);

               END UNTIL P.[42:6]≠31;

               M[(SOURCE + CARDLOC)+9]+0&"."[1:43:5];%
                 END;    % NOT DCOM

               END    ;%
```

```
20289601 T  0000:0
20290000 T  0000:0
20291000 T  0000:0
20292000 T  0000:0
20292100 T  0000:0
20292200 T  0000:0
20293000 T  0000:0
20294000 T  0000:0
20294800 T  0000:0
20295000 T  0003:1
20295100 T  0004:2
20295200 T  0006:3
20295300 T  0007:1
20295999 T  0009:0
20296099 T  0009:0
20296100 T  0009:0
20296200 T  0009:3
20296201 T  0011:1
20297000 T  0011:1
20298000 T  0012:2
20298100 T  0015:3
20298111 T  0016:1
20299000 T  0016:1
20299020 T  0018:2
20299030 T  0020:1
20299040 T  0021:3
                20299040
20299110 T  0023:2
20299111 T  0024:1
20300000 T  0024:3
20301000 T  0026:0
20301100 T  0027:2
20301200 T  0029:2
                20301200
20301300 T  0031:0
                20301300
20301400 T  0032:1
20301500 T  0033:0
20301600 T  0034:1
                20301000
20301700 T  0034:2
                20299111
20302000 T  0036:1
                20298100
20303000 T  0037:3
20303900 T  0041:2
                20295300
20304000 T  0041:2
                20293000
          SIZE= 0042 WORDS
```

```
                    COMMENT THE SCAN ROUTINE IS USED FOR CONTROL CARD SCANNING.%                    20305000 T  0000:0
                              SCAN  RETURNS THE FOLLOWING RESULTS :%                                20306000 T  0000:0
                                   4  FOR IDENTIFIERS WHICH ARE NOT RESERVED%                      20307000 T  0000:0
                                   0  FOR PERIOD%                                                  20308000 T  0000:0
                                   1  FOR SLASH%                                                   20309000 T  0000:0
                                   2  FOR QUESTION MARK%                                           20310000 T  0000:0
                                   5...  FOR IDENTIFIERS IN DIRECT.%                               20311000 T  0000:0
                                   3  FOR OTHER SPECIAL CHARACTERS.%                               20312000 T  0000:0
                                   13  FOR "PRIORITY"                    ;%                      20313000 T  0000:0
                    REAL PROCEDURE SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,                  20314000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00626
PRT(650) = SCN
                                   DIRECT);                                                         20314050 T  0000:0
                              VALUE UNITNO,CARDLOC                                 ;               20314100 T  0000:0
                               REAL UNITNO,CARDLOC,SOURCE,      KOUNT,LASTSCAN ;                 20314200 T  0000:0
                              ARRAY ACCUM[*],DIRECT[*];                                           20314300 T  0000:0
                         BEGIN%                                                                   20315000 T  0000:0
                         LABEL  GOGO,       TYPE0,TYPE1,TYPE2;%                                   20316000 T  0000:0
                         SWITCH TYPE ← TYPE0,TYPE1,TYPE2 ;%                                       20317000 T  0000:0
                         DEFINE DSIZE =  56#;%                                                    20318000 T  0000:0
                         REAL  I;%                                                                20319000 T  0000:0
STACK(F+2) = I
                         LABEL PERPER;%                                                           20320000 T  0000:0
                    GOGO:%                                                                        20321000 T  0000:0
                         IF LASTSCAN THEN%                                                        20322000 T  0000:2
                              BEGIN IF LASTSCAN < 0 OR UNITNO = 31 THEN%                          20323000 T  0000:3
                                        BEGIN I ← QUEST; LASTSCAN ← 0; GO TO TYPE1 END;           20324000 T  0003:0
                                                                                                                  20324000
                              FETCH(UNITNO,CARDLOC,SOURCE);                                       20325000 T  0005:3
                              LASTSCAN:=0                                                         20325100 T  0007:1
$ SET OMIT = NOT(PACKETS)                                                                         20325109 T  0007:1
                                        &1[2:47:1];                                               20325110 T  0007:1
$ POP OMIT                                                                                        20325111 T  0009:1
                         END;%                                                                    20326000 T  0009:1
                                                                                                                  20323000
                    I ← IDENT;%                                                                   20327000 T  0009:1
                    STREAM (J←0,K←0,SOURCE : ACCUM);%                                             20328000 T  0010:0
                         BEGIN%                                                                   20329000 T  0012:0
                         SI ← SOURCE ; DI ← ACCUM ;  DI←DI+1;%                                    20330000 T  0012:0
                    L:   IF SC = " " THEN BEGIN SI←SI+1; GO L END;%                               20331000 T  0012:3
                                                                                                                  20331000
                         IF SC = ALPHA THEN%                                                      20332000 T  0013:3
                              BEGIN%                                                              20333000 T  0014:1
                         IF SC =@14 THEN GO TO L3;%                                               20334000 T  0014:1
                              DS ← CHR ; TALLY ← 1;%                                              20335000 T  0015:0
                         L1:  63(IF SC=ALPHA THEN BEGIN DS←CHR;%                                  20336000 T  0015:2
                                   TALLY←TALLY+1 END ELSE JUMP OUT);%                             20337000 T  0016:2
                                                                                                                  20336000
                              K←TALLY; TALLY←0; J←TALLY;  DS←8 LIT" ";%                           20338000 T  0017:3
                              END%                                                                20339000 T  0019:3
                                                                                                                  20333000
                         ELSE IF SC = """ THEN%                                                   20340000 T  0019:3
                              BEGIN    SI ← SI+1;%                                                20341000 T  0020:2
                              30(IF SC="""" THEN JUMP OUT;                                        20342000 T  0020:3
                                 DS:=CHR; TALLY:=TALLY+1);                                        20342250 T  0022:0
                              IF TOGGLE THEN                    % FOUND CLOSING QUOTE           20342500 T  0022:3
                                   BEGIN DS:=8 LIT" "; SI:=SI+1;                                  20342750 T  0023:0
```

```
                    K:=TALLY; TALLY:=1; J:=TALLY;                                                    20343000 T  0024:2
                    END                                                                              20343250 T  0025:1
                                                                                                                 20342750
               ELSE                                  % INVALID STRING                                20343500 T  0025:1
                    BEGIN                                                                            20343750 T  0025:2
                    SI←SI-31; GO L3;                                                                 20344000 T  0025:2
                    END;                                                                             20344250 T  0026:0
                                                                                                                 20343750
               END%                                                                                  20345000 T  0026:0
                                                                                                                 20341000
          ELSE BEGIN%                                                                                20346000 T  0026:0
     L3:%                                                                                            20347000 T  0026:1
               TALLY ← 2; J←TALLY; DI←LOC K; DI←DI+7; DS←CHR ;%                                      20348000 T  0026:1
               END;%                                                                                 20349000 T  0027:2
                                                                                                                 20346000
          SOURCE ← SI;%                                                                              20350000 T  0027:2
               END;%                                                                                 20351000 T  0027:3
                                                                                                                 20329000
COMMENT  STACK NOW CONTAINS :  0 FOR IDENTIFIER & NO. OF CHRS%                                       20352000 T  0028:0
                               1 FOR "ID"       & NO. OF CHRS%                                       20353000 T  0028:0
                               2 FOR SPECIAL CHR & ACTUAL CHR   ;%                                   20354000 T  0028:0
     P([SOURCE],←);                                                                                  20355000 T  0028:0
     P([KOUNT],←);                                                                                   20356000 T  0028:2
     GO TO TYPE[POLISH];%                                                                            20357000 T  0029:0
TYPE0:%                                                                                              20358000 T  0031:1
      BEGIN                                                                                          20361000 T  0031:1
     I←-2;   WHILE  DIRECT[I←I+2]≠0  DO%                                                             20362000 T  0031:1
          IF (DIRECT[I] EQV ACCUM[0])= NOT 0  THEN%                                                  20363000 T  0034:3
          BEGIN IF DIRECT[I+1] ≠QUEST OR UNITNO=25 OR UNITNO≥30 THEN                                 20364000 T  0036:3
               BEGIN I←DIRECT[I+1];GO TO TYPE1 END END;%                                             20365000 T  0040:1
                                                                                                                 20365000
                                                                                                                 20364000
          I ← IDENT  ;  END;%                                                                        20366000 T  0043:3
                                                                                                                 20361000
     GO TO TYPE1  ;%                                                                                 20367000 T  0044:2
TYPE2:%                                                                                              20368000 T  0045:0
     IF KOUNT≠"←" THEN ACCUM[0]← "      0" OR KOUNT;                                                 20368100 T  0045:0
     IF KOUNT="←" OR%                                                                                20369000 T  0048:0
          KOUNT ="." THEN%                                                                           20370000 T  0048:3
               BEGIN LASTSCAN ← 1;%                                                                  20371000 T  0049:3
PERPER:              I ← PERIO; GO TO TYPE1;%                                                        20372000 T  0051:1
               END;%                                                                                 20373000 T  0054:0
                                                                                                                 20371000
     IF KOUNT="-" THEN BEGIN IF UNITNO≥32 THEN                                                       20374000 T  0054:0
                             IF CIDTABLE[UNITNO-32,3]≥                                               20374100 T  0056:0
                                CIDTABLE[UNITNO-32,7] THEN                                           20374200 T  0058:0
                                BEGIN I←ENDFI; GO TO TYPE1 END;                                      20374300 T  0059:3
                                                                                                                 20374300
                             IF UNITNO = 31 THEN                                                     20374310 T  0061:2
                             BEGIN I←PERIO; GO TO TYPE1 END;                                         20374320 T  0062:1
                                                                                                                 20374320
                             FETCH(UNITNO,CARDLOC,SOURCE);                                           20374400 T  0064:0
               STREAM(CARDLOC);                                          %890-                       20374401 C  0065:2
               BEGIN SI←CARDLOC;                                         %890-                       20374402 C  0066:1
                 2(36(IF SC=">" THEN                                     %890-                       20374403 C  0066:2
                 BEGIN CARDLOC←SI;DI←CARDLOC;DS← LIT "=" END;            %890-                       20374404 C  0067:2
                                                                                                                 20374404
                      IF SC="≥" THEN                                     %890-                       20374405 C  0068:2
```

```
                    BEGIN CARDLOC←SI;DI←CARDLOC;DS← LIT """ END;  %890-        20374406 C  0069:0
                                                                                        20374406
                    SI←SI+1;))                                    %890-        20374407 C  0070:0
                  END;                                            %890-        20374408 C  0070:3
                                                                                        20374402
$ SET OMIT = NOT(PACKETS)                                                       20374409 T  0071:0
      IF UNITNO GEQ 32 AND NOT LASTSCAN,[2:1] THEN                              20374410 T  0071:0
      BEGIN STREAM(CARDLOC, I←I←SPACE(10));                                     20374415 T  0073:0
            BEGIN DS←5LIT">";                                                   20374420 T  0076:2
                  SI←CARDLOC; 2(DS←36 CHR); DS←LIT"←";                          20374425 T  0077:2
            END; SPOUTER(I,UNITNO,64);                                          20374430 T  0079:0
                                                                                        20374420
      END;                                                                      20374435 T  0080:2
                                                                                        20374415
$ POP OMIT                                                                      20374436 T  0080:2
                              GO TO GOGO;                                       20374500 T  0080:2
                        END;                                                    20374600 T  0081:0
                                                                                        20374000
      IF KOUNT = ";" THEN%                                                      20375000 T  0081:0
           BEGIN LASTSCAN ← -1; GO TO PERPER END;%                              20376000 T  0081:3
                                                                                        20376000
      I ← IF KOUNT ="/" THEN SLASH ELSE%                                        20377000 T  0084:0
            (IF KOUNT = @14 THEN QUEST ELSE%                                    20378000 T  0086:0
            (IF KOUNT =","  THEN COMMA ELSE%                                    20379000 T  0088:0
          (IF KOUNT = "=" THEN EQUAL ELSE % THIS IS AS IN SYMBOL                20380000 P  0090:0
            (IF KOUNT = "]" THEN RB ELSE                                        20380100 T  0092:0
            (IF KOUNT = "[" THEN LB ELSE                                        20380200 T  0094:0
            (IF KOUNT = "#" THEN POUND ELSE SPEC))))))));                       20380500 T  0096:0
 TYPE1: SCN←I;                                                                  20381000 T  0098:3
            END   SCAN  ;%                                                      20382000 T  0099:2
                                                                                        20315000
                                                                          SIZE= 0100 WORDS
```

```
                    PROCEDURE SEEKNAM(A,B,C,D,F,N,XLST); VALUE A,B;                                  20382010 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00630
                        REAL A,B,C,D,E,N; ARRAY XLST[*];                                            20382015 T  0000:0
                             BEGIN                                                                  20382020 T  0000:0
                             LABEL FIND,L;                                                          20382030 T  0000:0
                             ARRAY NB[*];                                                           20382040 T  0000:0
STACK(F+1) = NB
                             REAL I,K,T,X; INTEGER J; BOOLEAN INXLST;                               20382050 T  0000:0
STACK(F+2) = I
STACK(F+3) = K
STACK(F+4) = T
STACK(F+5) = X
STACK(F+6) = J
STACK(F+7) = INXLST
                             INTEGER J1,J2,J3,K1,K2;                                                20382052 T  0000:0
STACK(F+10) = J1
STACK(F+11) = J2
STACK(F+12) = J3
STACK(F+13) = K1
STACK(F+14) = K2
                             LABEL RESTART;                                                         20382054 T  0000:0
                             IF C=0 THEN                                                            20382056 T  0000:0
                             BEGIN N:=SPACE(60)-1;                                                  20382058 T  0003:3
                                  J1:=J3:=0; K1:=K2:=MODULUS-1;                                     20382060 T  0007:1
                                  IF A GEQ 0 THEN J1:=K1:=(A.[6:18]+A.[24:24]) MOD MODULUS;         20382062 T  0010:1
                                  IF B GEQ 0 THEN J3:=K2:=(B.[6:18]+B.[24:24]) MOD MODULUS;         20382064 T  0014:3
                             END ELSE                                                               20382066 T  0019:1
                                                                                                                 20382058
                             BEGIN I:=(T:=M[N]).[42:6];                                             20382068 T  0019:1
                                  J1:=T.[36:6]; J2:=T.[30:6]; J3:=T.[12:6];                         20382070 T  0022:1
                                  K1:=T.[24:6]; K2:=T.[18:6];                                       20382072 T  0026:0
                             END;                                                                   20382074 T  0028:2
                                                                                                                 20382068
                             NB:=[M[N+1]]&60[8:38:10];                                              20382076 T  0028:2
                             IF C NEQ 0 THEN GO TO RESTART;                                         20382095 T  0031:1
                             FOR J1:=J1 STEP 1 UNTIL K1 DO                                          20382100 T  0032:2
                             FOR J2:=J3 STEP 1 UNTIL K2 DO                                          20382110 T  0034:0
                             BEGIN J:=SCRAMBLE(J1,J2);                                              20382120 T  0035:0
                                  DO BEGIN                                                          20382130 T  0042:0
                                       DISKWAIT(-N-1,60,J);                                         20382140 T  0042:0
                                       FOR I:=0 STEP 3 UNTIL 57 DO                                  20382150 T  0044:0
                                       BEGIN                                                        20382160 T  0045:0
                                       IF (T:=NB[I]) NEQ @14 THEN                                   20382165 T  0045:0
                                       IF (T EQV A)=NOT 0 OR A<0 THEN                               20382170 T  0046:2
                                       IF (NB[I+1] EQV B)=NOT 0 OR B LSS 0 THEN                     20382200 T  0049:2
                                       IF (X:=XLST.[8:10]-2) GEQ 0 THEN % EXCEPT LIST EXISTS        20382220 T  0053:1
                                        BEGIN INXLST:=FALSE;                                        20382240 T  0056:1
                                        FOR K:=0 STEP 2 UNTIL X DO                                  20382260 T  0057:2
                                        IF (XLST[K] EQV T)=NOT 0 OR XLST[K] LSS 0 THEN              20382280 T  0059:0
                                        IF (XLST[K+1] EQV NB[I+1])=NOT 0 OR XLST[K+1] LSS 0         20382300 T  0062:0
                                         THEN BEGIN INXLST:=TRUE;                                   20382320 T  0066:2
                                              IF NOT (XLST[K].[1:1] OR XLST[K+1].[1:1])             20382340 T  0068:2
                                               THEN BEGIN XLST[K]:=XLST[X];                         20382360 T  0070:1
                                                          XLST[K+1]:=XLST[X+1];                     20382380 T  0073:2
                                                          XLST.[8:10]:=XLST.[8:10]-2;               20382400 T  0076:0
                                                    END;                                            20382420 T  0079:1
                                                                                                                 20382360
```

```
                        K:=X;
                        END;

                    IF INXLST THEN FLSE GO FIND;
                    END ELSE GO FIND;

RESTART:        END;

                END UNTIL (J:=NB[2].[FF])=0;

     END;

     FORGETSPACE(NB);
     IF C=0 THEN N:=0 FLSE C:=0;
     GO L;
FIND:
     D:=NB[I]; E:=NB[I+1];
     C:=NB[I+2].[CF];
     M[N]:=I&J1[36:42:6]&J2[30:42:6]&K1[24:42:6]&K2[18:42:6]&
           J3[12:42:6];
L:
     END;          % SEEKNAME
```

```
20382440 T  0079:1
20382460 T  0080:0
                    20382320
20382480 T  0082:1
20382500 T  0083:0
                    20382240
20382520 T  0083:0
                    20382160
20382540 T  0085:1
                    20382130
20382560 T  0087:3
                    20382120
20382580 T  0092:1
20382600 T  0093:1
20382620 T  0097:0
20382640 T  0097:2
20382660 T  0097:2
20382680 T  0100:2
20382700 T  0102:3
20382720 T  0107:3
20382740 T  0109:1
20382760 T  0109:1
                    20382020
              SIZE= 0110 WORDS
```

```
                REAL PROCEDURE PPC                                                                  20383000 T  0000:0
                                                                                  START OF REL SEGMENT: DISK ADDRESS = 00634
                    (ADDR,FQN,X,DEX,TYPE,UNITNO,CARDLOC,SOURCE,ACCUM,LASTSCAN,                      20384000 T  0000:0
PRT(651) = PPC
                     DIRECT);                                                                       20384100 T  0000:0
                  VALUE                TYPE,UNITNO,CARDLOC                          ;              20385000 T  0000:0
                   REAL ADDR,      DEX,TYPE,UNITNO,CARDLOC,SOURCE,      LASTSCAN ;                20386000 T  0000:0
                  ARRAY FQN[*],X[*],ACCUM[*],DIRECT[*];                                             20386100 T  0000:0
                       BEGIN%                                                                       20387000 T  0000:0
                       REAL IOD,KOUNT;                                                              20388000 T  0000:0
STACK(F+2) = IOD
STACK(F+3) = KOUNT
                       LABEL  EXIT,ERROR,NEXT,LFORM,LNO,LDISK,LTAPE,LPUNCH,LPAPER,%                 20389000 T  0000:0
                            ROUND,PROTECT,                                                          20390000 T  0000:0
                            SERIAL,UPDATE,SPO,DSKCHECK,                          % (SHM)            20391000 T  0000:0
                            DOWN,LREMOTE,                                                           20392000 T  0000:0
                              LDUMMY,                                             %846-             20392870 C  0000:0
                         LLINES66,  %                                             %724-             20392880 C  0000:0
                         LRANDOM,                                                 %603-             20392890 C  0000:0
                            LSPECIAL,LPRINT,LBACK,LCOPY,LFREE;                                      20393000 T  0000:0
                      SWITCH D+LFORM,                                             %603-             20394000 P  0000:0
                             LDUMMY,                                              %846-             20394070 C  0000:0
                         LLINES66,                                                %724-             20394080 C  0000:0
                         LRANDOM,                                                 %603-             20394090 C  0000:0
                       LNO,LDISK,LTAPE,LPUNCH,LPRINT,LPAPER,                      %603-             20394900 C  0000:0
                            LBACK,SERIAL,UPDATE,SPO,%                                               20395000 T  0000:0
                            LREMOTE,LSPECIAL,ERROR,ERROR,ERROR,ERROR,LCOPY,ERROR,                   20396000 T  0000:0
                            LFREE,ERROR,PROTECT;                                                    20396010 T  0000:0
                       REAL NOLBL,TPNO ;%                                                           20397000 T  0000:0
STACK(F+4) = NOLBL
STACK(F+5) = TPNO

                       BOOLEAN FAROUT;                                                              20397050 T  0000:0
STACK(F+6) = FAROUT

                       REAL SUBROUTINE SCAN;                                                        20397100 T  0000:0
                            BEGIN SCAN+SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,              20397200 T  0001:0
                                          DIRECT)                                                   20397300 T  0003:0
                            END;                                                                    20397400 T  0003:2
                                                                                                                20397200
                       IF  TYPE = FILEV  THEN%                                                      20398000 T  0004:3
                            BEGIN%                                                                  20399000 T  0007:1
                            IF  ADDR =0  THEN ADDR+X[13]+GETFSPDISK ;%                              20400000 T  0007:3
                            IF    DEX  =  2   THEN%                                                 20401000 T  0011:1
                                  BEGIN%                                                            20402000 T  0012:0
                                  EQN [29] + GETESPDISK;%                                           20403000 T  0012:2
                                  DISKIO( IOD , EQN     INX 0-1   ,30, ADDR);%                      20404000 T  0014:0
                                  ADDR + EQN[29];%                                                  20405000 T  0016:3
                                  DEX + 0;%                                                         20406000 T  0018:0
                                  SLEEP([IOD], IOMASK);%                                            20407000 T  0019:0
                                  END;%                                                             20408000 T  0020:2
                                                                                                                20402000
                            IF (TYPE!=SCAN) < IDENT THEN GO TO ERROR;                               20409000 T  0020:2
                            EQN + (14 × DEX) INX  EQN ;%                                            20410000 T  0023:2
                            EQN[12]:=0; % ZERO OUT EU/SPEED CELL                 % (SHM)             20410100 T  0025:2
                            STREAM( KOUNT, ACCUM, Z + [EQN[4]]);%                                   20411000 T  0026:3
                                  BEGIN%                                                            20412000 T  0028:2
                                  SI + LOC KOUNT ; SI+SI+7; DI+Z; DS+CHR;%                          20413000 T  0028:2
                                  SI + ACCUM ; SI+SI+1;  DS+ KOUNT CHR ;%                           20414000 T  0029:2
```

```
     END ;%                                                                    20415000 T  0030:2
                                                                                         20412000
IF X[0]<0 THEN IF KOUNT=4 AND ACCUM[0].[6:24]="CARD"                           20415100 T  0030:3
     THEN FAROUT ← TRUE;                                                       20415200 T  0034:1
IF SCAN ≠ EQUAL THEN GO TO ERROR;                                              20416000 T  0036:0
IF SCAN < IDENT THEN GO TO ERROR;                                              20416500 T  0038:0
EQN[2] ← EQN[3];%                                                              20417000 T  0040:0
EQN[0]←0;  EQN[1] ← ACCUM[0];%                                                 20418000 T  0041:0
IF  (TYPE←SCAN)= SLASH  THEN%                                                  20419000 T  0044:3
BEGIN  IF SCAN≥IDENT  THEN%                                                    20420000 T  0047:0
     BEGIN   EQN[0]←EQN[1]; EQN[1]←ACCUM[0]    ;%                              20421000 T  0049:2
;    END    ELSE   GO TO   ERROR;%                                             20422000 T  0053:0
                                                                                         20421000
          TYPE ← SCAN  END;%                                                   20423000 T  0053:0
                                                                                         20420000
IF TYPE = COMMA THEN%                                                          20424000 T  0054:2
     BEGIN%                                                                    20425000 T  0055:1
IF(TYPE←SCAN)≠ IDENT OR KOUNT >3 THEN  GO TO ERROR;%                           20426000 T  0055:3
     STREAM ( S ← 3-KOUNT,KOUNT,ACCUM, T←[EQN[2]]);%                           20427000 T  0059:3
     BEGIN  SI←ACCUM; SI←SI+1; DI←DI+S; DS←KOUNT NUM;%                         20428000 T  0062:1
     END;%                                                                     20429000 T  0063:3
                                                                                         20428000
IF(TYPE←SCAN)= COMMA THEN%                                                     20430000 T  0064:0
     BEGIN%                                                                    20431000 T  0066:0
     IF(TYPE←SCAN)≠ IDENT OR KOUNT>5 THEN GO TO ERROR;%                        20432000 T  0066:2
          STREAM( S←8-KOUNT,KOUNT,ACCUM, T←[EQN[2]]);%                         20433000 T  0070:3
          BEGIN SI←ACCUM; SI←SI+1; DI←DI+S;DS←KOUNT NUM%                       20434000 T  0073:1
          END;%                                                                20435000 T  0074:3
                                                                                         20434000
     EQN[2].[42:1] ← 1;% SO FILE OPEN KNOWS ITS LABELEQUAT                     20435500 T  0075:0
          IF(TYPE←SCAN)= COMMA  THEN%                                          20436000 T  0077:2
               BEGIN%                                                          20437000 T  0080:0
          IF(TYPE←SCAN)≠IDENT OR KOUNT>1 THEN GO TO ERROR;                     20438000 T  0080:2
               STREAM(S←1-KOUNT,KOUNT,ACCUM,T←[EQN[3]]);                       20439000 T  0084:3
               BEGIN SI←ACCUM; SI←SI+1; DI←DI+S;DS←KOUNT NUM;%                 20440000 T  0087:1
               END;    TYPE ← SCAN;%                                           20441000 T  0088:3
                                                                                         20440000
               END% CYCLE ;%                                                   20442000 T  0090:2
                                                                                         20437000
          END% CREATION DATE ;%                                                20443000 T  0090:2
                                                                                         20431000
          END;%REEL  NUMBER;%                                                  20444000 T  0090:2
                                                                                         20425000
     TPNO←@37;%                                                                20445000 T  0090:2
     NOLBL ← 0;%                                                               20446000 T  0091:1
ROUND:%                                                                        20447000 T  0092:0
     WHILE TYPE NEQ PERIO AND                                                  20448000 T  0092:0
      ((TYPE LSS FORM AND TYPE NEQ COPYN) OR TYPE GTR FREEF) DO                20448050 T  0092:3
      TYPE:=SCAN;                                                              20448100 T  0096:1
     IF TYPE = PERIO THEN GO TO EXIT;%                                         20449000 T  0099:0
     IF TYPE = COPYN THEN GO LCOPY;                                            20449100 T  0100:1
     GO TO D[TYPE-FORM];%                                                      20450000 T  0101:2
  NEXT:     TYPE←SCAN;  GO TO  ROUND;%                                         20451000 T  0115:2
LDUMMY:     TPNO←11;  % " FORM SPO" - DUMMY FILE                  %846-        20451900 C  0118:0
 LFORM:%                                                                       20452000 T  0118:3
     EQN[3].[42:1]←1; GO TO NEXT;%                                             20453000 T  0118:3
 LNO:%                                                                         20454000 T  0121:3
```

```
      NOLBL ← 1; GO TO NEXT;%                                                    20455000 T  0121:3
LDISK:%                                                                          20456000 T  0123:0
  TPNO←12;  GO TO DSKCHECK;  % "DISK" MEANS DISK SERIAL          %603-           20457000 P  0123:0
LTAPE:%                                                                          20458000 T  0124:1
      TPNO ← 2; GO TO NEXT;%                                                     20459000 T  0124:1
LPUNCH:%                                                                         20460000 T  0125:2
      TPNO:=0;                                                                   20460100 T  0125:2
      IF (TYPE:=SCAN)=PERIO THEN GO TO EXIT;                                     20461000 T  0126:1
      IF TYPE=FREEF THEN GO TO LFREE ELSE                                        20461050 T  0128:2
      IF TYPE=BACK THEN                                                          20461100 T  0129:1
      TPNO←20 ELSE                                                               20461200 T  0130:2
  BEGIN TPNO←21; IF TYPE=COPYN THEN BEGIN                        %603-           20461300 P  0131:3
        TPNO←22; GO LCOPY                END ELSE                %603-           20461310 C  0134:1
                                                                                                  20461300
        IF SCAN≠BACK THEN GO ERROR;                              %603-           20461320 C  0135:2
  END;                                                           %603-           20461330 C  0138:0
                                                                                                  20461300
      IF SCAN=PERIO THEN GO ERROR;                                               20461400 T  0138:0
      IF (TYPE←SCAN)=PERIO THEN                                                  20461500 T  0140:0
          TPNO←TPNO+4 ELSE                                                       20461600 T  0142:0
      IF TYPE=FREEF THEN GO TO LFREE ELSE                                        20461650 T  0143:3
      IF TYPE=DISK THEN                                                          20461700 T  0145:0
          TPNO←TPNO+2 ELSE                                                       20461800 T  0146:1
  IF TYPE=COPYN THEN BEGIN TPNO←22; GO LCOPY END ELSE            %603-           20461810 C  0148:0
                                                                                                  20461810
      IF TYPE≠TAPE THEN GO ERROR;                                                20461900 T  0151:0
          IF TYPE≠PERIO THEN GO NEXT ELSE GO EXIT;                               20461950 T  0152:3
LPAPER:%                                                                         20462000 T  0154:2
      TYPE ← SCAN; TPNO ← 7; GO TO NEXT;%                                        20463000 T  0154:2
LSPECIAL:%                                                                       20464000 T  0157:3
      TPNO ← 3; GO TO NEXT;%                                                     20465000 T  0157:3
LLINES66: %                                                      %724-           20465050 C  0159:0
    EQN[0] ← "FULLPGE" ;  %SET UP MFID FOR FULL PAGE             %724-           20465100 C  0159:0
  LPRINT:%                                                                       20466000 T  0160:1
      TPNO:=1;                                                                   20466100 T  0160:1
      IF (TYPE:=SCAN)=PERIO THEN GO TO EXIT;                                     20467000 T  0161:0
      IF TYPE=FREEF THEN GO TO LFREE ELSE                                        20467100 T  0163:2
      IF TYPE=BACK THEN                                            %P            20468000 T  0164:1
  LBACK:    TPNO←6 ELSE                                            %P            20469000 T  0165:2
    BEGIN TPNO←4; IF TYPE=COPYN THEN BEGIN                       %603-           20470000 P  0166:3
          TPNO←15; GO TO LCOPY         END ELSE                  %603-           20470100 C  0171:0
                                                                                                  20470000
        IF SCAN≠BACK THEN GO ERROR;                              %603-           20470110 C  0172:1
    END;                                                         %603-           20470120 C  0175:0
                                                                                                  20470000
      IF SCAN=PERIO THEN GO ERROR;                                 %P            20471000 T  0175:0
      IF (TYPE←SCAN)=PERIO THEN                                    %P            20472000 T  0177:0
          TPNO←22-TPNO ELSE                                        %P            20473000 T  0179:0
      IF TYPE=FREEF THEN GO TO LFREE ELSE                                        20473100 T  0180:3
      IF TYPE=DISK THEN                                            %P            20474000 T  0182:0
          TPNO←21-TPNO ELSE                                        %P            20475000 T  0183:1
    IF TYPE=COPYN THEN BEGIN TPNO←16; GO LCOPY END ELSE          %603-           20475100 C  0185:0
                                                                                                  20475100
      IF TYPE≠TAPE THEN GO ERROR;                                  %P            20476000 T  0188:0
          IF TYPE ≠PERIO THEN GO NEXT ELSE GO EXIT;                              20477000 T  0189:3
  LFREE:                                                                         20478500 T  0191:2
$ SET OMIT = NOT(PACKETS)                                                        20478504 T  0191:2
```

```
                EQN[3].[23:1]←1;                                                                    20478505 T  019:2
$ POP OMIT                                                                                          20478506 T  019:0
                GO TO NEXT;                                                                         20478508 T  019:0
   LCOPY:       IF (TYPE:=SCAN) NEQ IDENT OR KOUNT GTR 3 THEN GO TO ERROR;                          20478510 T  019:2
                STREAM(A:=0:KOUNT,ACCUM);                                                           20478520 T  019:0
                BEGIN SI:=ACCUM;SI:=SI+1;DI:=LOC A;DS:=KOUNT OCT END;                               20478530 T  020:2
                                                                                                                 20478530
                IF(TYPE:=P(DUP)) GTR 256 OR P(XCH)LSS 1 THEN GO ERROR;                              20478540 T  020:0
                EQN[3].[15:8]:=TYPE-1;GO TO NEXT;                                                   20478550 T  020:0
   ERROR:%                                                                                          20479000 T  020:2
        PPC←TRUE;GO DOWN;%                                                                          20480000 T  020:2
   SPO:         TPNO←11;GO TO NEXT;%                                                               20481000 T  020:3
   LREMOTE:     TPNO← 19;  GO NEXT;                                                                20481100 T  021:0
 LRANDOM:   TPNO←10; GO TO DSKCHECK;                                          %603-                20481900 C  021:1
   SERIAL:  TPNO:=12; GO TO DSKCHECK;                                       % (SHM)                 20482000 T  021:2
   UPDATE:      TPNO←13; GO TO DSKCHECK;                                                           20483000 T  021:3
   PROTECT:     TPNO←26;                                                                           20483100 T  021:0
   DSKCHECK:                                                                % (SHM)                 20484000 T  021:3
                IF (TYPE:=SCAN)=COMMA THEN GO TO DSKCHECK;                  % (SHM)                 20484050 T  021:3
                IF TYPE=EU THEN                                             % (SHM)                 20484100 T  021:2
                   BEGIN                                                    % (SHM)                 20484150 T  022:1
                   IF SCAN NEQ EQUAL THEN GO TO ERROR ELSE                  % (SHM)                 20484200 T  022:3
                   IF (TYPE:=SCAN) NEQ IDENT OR KOUNT GTR 2 THEN GO ERROR;                          20484250 T  022:2
                   STREAM(KOUNT,ACCUM,T:=[TYPE]);                           % (SHM)                 20484300 T  022:0
                      BEGIN                                                 % (SHM)                 20484350 T  022:1
                      SI:=ACCUM; SI:=SI+1; DI:=T; DS:=KOUNT OCT;            % (SHM)                 20484400 T  022:1
                      END;                                                  % (SHM)                 20484450 T  022:2
                                                                                                                 20484350
                   EQN[12].[18:5]:=TYPE+1;                                  % (SHM)                 20484500 T  022:3
                   GO TO DSKCHECK;                                          % (SHM)                 20484550 T  023:3
                   END % IF EU                                              % (SHM)                 20484600 T  023:1
                                                                                                                 20484150
                ELSE IF TYPE=FAST OR TYPE=SLOW THEN                         % (SHM)                 20484650 T  023:1
                   BEGIN                                                    % (SHM)                 20484700 T  023:2
                   EQN[12].[16:2]:=1+(TYPE=SLOW);                           % (SHM)                 20484750 T  023:0
                   GO TO DSKCHECK;                                          % (SHM)                 20484800 T  023:2
                   END                                                                             20484850 T  024:0
                                                                                                                 20484700
                ELSE IF TYPE = SENSE THEN                                                          20484855 T  024:0
                   BEGIN                                                                           20484860 T  024:1
                   EQN[12].[15:1]:=1;                                                              20484865 T  024:3
                   GO TO DSKCHECK;                                                                 20484870 T  024:1
                   END;                                                                            20484875 T  024:3
                                                                                                                 20484860
             GO TO ROUND;                                                   % (SHM)                 20484900 T  024:3
EXIT:%                                                                                             20485000 T  024:1
     IF    NOLBL THEN TPNO ← IF TPNO=2 THEN 9 ELSE%                                                20486000 T  024:1
                 (IF TPNO =3 THEN 5  ELSE%                                                         20487000 T  024:0
           (IF TPNO=7 THEN 8 ELSE%                                                                 20488000 T  025:0
           (IF TPNO=@37 THEN 9 ELSE TPNO)));%                                                      20489000 T  025:2
     IF FAROUT THEN IF UNITNO≥32 THEN CIDROW[UNITNO-32].[3:5] ← 0                                  20489100 T  025:3
                ELSE IF UNITNO=23 THEN READERA.[FF] ← 0                                            20489200 T  025:3
                ELSE IF UNITNO=24 THEN READERB.[FF] ← 0;                                           20489300 T  026:2
     EQN[3].[43:5]←TPNO;%                                                                          20490000 T  026:3
          DEX  ←  DEX+1;%                                                                          20491000 T  026:1
          END%                                                                                     20492000 T  026:3
                                                                                                                 20399000
```

```
          ELSE%
               BEGIN%                                                                                    20493000 T  0269:3
               DO UNTIL (IOD ← SCAN) = EQUAL OR IOD = PERIO;%                                            20494000 T  0269:3
               IF IOD = PERIO THEN GO TO ERROR;%                                                         20495000 T  0271:0
                    IOD ← SCAN;%                                                                         20496000 T  0274:2
                    STREAM (K←0; A ← [ACCUM[0]],KOUNT);%                                                 20497000 T  0275:3
                         BEGIN%                                                                          20498000 T  0277:2
                         SI ← A ; SI←SI+1; DI←LOC K;%                                                    20499000 T  0279:1
                         KOUNT(IF SC<"0" THEN BEGIN DS←LIT"+";                                           20500000 T  0279:1
                               JUMP OUT TO ERR; END; SI←SI+1);                                           20500100 T  0280:0
                                                                                                         20500200 T  0281:2
                                                                                                                      20500100
                               SI←SI-KOUNT;                                                              20500300 T  0282:2
                         DS ← KOUNT  OCT ;%                                                              20501000 T  0283:0
                         ERR;                                                                            20501100 T  0283:2
                    END;%                                                                                20502000 T  0283:2
                                                                                                                      20499000
          IF (TPNO←P).[1:1] THEN GO TO ERROR;                                                            20503000 T  0283:3
          IF TYPE=PROCE OR TYPE=IO THEN X[16+TYPE=PROCE]←TPNO×3600                                       20504000 T  0285:2
          ELSE IF TYPE=COREV THEN                                                          %512-         20504500 P  0289:2
               BEGIN X[20] ← TPNO DIV 64;                                                  %512-         20505000 P  0292:3
               DO UNTIL (IOD ← SCAN)=MAXV OR IOD=PERIO;                                    %512-         20507000 P  0295:0
               IF IOD=MAXV THEN P([X[20]],IOR) ELSE GO TO DOWN;                            %512-         20507100 P  0298:2
               END                                                                         %512-         20507200 P  0300:2
                                                                                                                      20505000
          ELSE IF TYPE≥PRIOR AND TYPE≤SAVEV THEN                                          %512-         20507300 P  0300:2
               X[18+TYPE-PRIOR]←TPNO ELSE GO TO ERROR;                                    %512-         20507400 C  0302:3
          DO UNTIL SCAN = PERIO;%                                                                        20508000 T  0305:2
               END;%                                                                                     20509000 T  0308:0
                                                                                                                      20494000
     DOWN:%
          END;%                                                                                          20510000 T  0308:0
                                                                                                         20511000 T  0308:0
                                                                                                                      20387000
          END%                                                                                                        20387000
                                                                                                                SIZE= 0309 WORDS
```

```
                PROCEDURE SECURITYMAINT( TYPE,SMID,SFID,CMM,SFH,CARD);                                  20511100 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00645
PRT(652) = SECURITYMAINT
                VALUE TYPE,SMID,SFID,SFH,CARD;                                                          20511110 T  0000:0
                REAL  TYPE,SMID,SFID,SFH,CARD;                                                          20511120 T  0000:0
                ARRAY CMM[*];                                                                           20511130 T  0000:0
                BEGIN                                                                                   20511140 T  0000:0
                DEFINE  SPOUTUNIT = CARD #;  % TO ALLOW "LIBERR" TO WORK          %589-                 20511148 C  0000:0
                REAL N4,OPTN,T1;                                                                        20511150 T  0000:0
STACK[F+1) = N4
STACK[F+2) = OPTN
STACK[F+3) = T1
                REAL ER1,ER2,ER3; LABEL ERSYS;                                    %169-                 20511152 C  0000:0
STACK[F+4) = ER1
STACK[F+5) = ER2
STACK[F+6) = ER3
                REAL T=TYPE;                                                                            20511155 T  0000:0
STACK[F-6) = T
                LABEL SEC3,FUNC0,FUNC1,FUNC2,FUNC3,SEC4,EXYT;                                           20511160 T  0000:0
                LABEL ERR,ERROR,FUNCJ;%                                                                 20511165 T  0000:0
                SWITCH FUNC←FUNCJ,FUNC0,FUNC1,FUNC2,FUNC3;%                                             20511170 T  0000:0
                LABEL EXIT; %                                                                           20511171 T  0000:0
                        ER1:=")←     ";%                                           %169-                 20511175 C  0000:0
                        N4:= ABS(CMM[5]);                                                               20511181 T  0002:1
                        IF ((CMM[0]EQV "DECK   ")=NOT 0) AND                                            20511182 T  0003:2
                           (((CMM[1]AND @77000000007777)EQV @1200000000003714)=NOT 0)                   20511184 T  0005:1
                        OR SYSTEMFILE(CMM[0],CMM[1]) THEN%                        %169-                 20511188 P  0007:0
                        BEGIN ERSYS; ER1:="SYSTEM ";ER2:="FILE)← "; GO ERROR END; %169-                 20511190 C  0009:2
                                                                                                                    20511190
                        IF TYPE = USEV AND                                                              20511295 T  0018:0
                        ((CMM[0]EQV SMID)=NOT 0 AND (CMM[1]EQV SFID)=NOT 0) THEN                        20511300 T  0018:3
                        BEGIN ER1:="SAME FI";ER2:="LE)←   "; GO ERROR END         %169-                 20511303 C  0022:3
                                                                                                                    20511303
                        ELSE                                                                            20511305 T  0028:0
                        IF (OPTN:=DIRECTORYSEARCH(CMM[0],CMM[1],4)) GEQ 64 THEN                         20511306 T  0028:0
                        BEGIN                                                                           20511311 T  0031:1
                        IF TYPE=USEV AND M[OPTN+2]<0 THEN%                        %169-                 20511312 P  0031:3
                        BEGIN ER1:="SECURIT";ER2:="Y FILE)";ER3:="←      "; GO ERR END;                 20511313 C  0034:3
                                                                                                                    20511313
                        IF (T1←((N4 EQV MCP)=NOT 0) OR (CMM[5]=NOT(-0))) OR                             20511315 T  0041:0
                          (M[OPTN+2]>0 AND(N4 EQV ABS(M[OPTN+2]))=NOT 0)THEN                            20511320 T  0045:2
                        GO TO SEC3 ELSE                                                                 20511330 T  0051:0
                        BEGIN ER1:="INVALID";ER2:=" USER)←";%                     %169-                 20511335 C  0051:0
                ERR:        FORGETSPACE(OPTN);%                                   %169-                 20511340 P  0053:1
                                FORGETSPACE(DIRECTORYSEARCH(CMM[0],CMM[1],14));                         20511350 T  0054:0
                           END;                                                                         20511360 T  0056:1
                                                                                                                    20511335
                        END ELSE IF OPTN=2 THEN GO ERSYS% @ LINE 20511190         %169-                 20511363 P  0056:1
                                                                                                                    20511311
                           ELSE IF OPTN=1 THEN BEGIN ER1:="IN USE)";ER2:="←      " END                   20511364 C  0059:3
                                                                                                                    20511364
                           ELSE IF OPTN=0 THEN BEGIN ER1:="NOT ON ";ER2:="DISK)← " END;                 20511365 P  0063:0
                                                                                                                    20511365
                ERROR:                                                            %169-                 20511366 C  0068:3
                        STREAM(A:=[CMM[0]],ER:=[ER1],B:=(OPTN:=SPACE(10)));       %169-                 20511370 P  0068:3
                        BEGIN SI:=A; SI:=SI+1; DS:=LIT" "; DS:=7 CHR;                                   20511380 T  0072:1
                              SI:=SI+1; DS:=LIT"/"; DS:=7 CHR;                                          20511390 T  0073:2
```

```
                DS:=25 LIT " SECURITY MAINT IGNORED ("; SI:=ER;%     %169-          20511400 P  0074:2
                3(SI:=SI+1; DS:=7 CHR);%                             %169-          20511405 C  0078:1
          END STREAM;                                                               20511410 T  0079:1
                                                                                                20511380
          SPOUTER(OPTN&CARD[9:9:9],CARD,LIBERR);                     %149-          20511420 P  0079:2
          GO TO EXYT;                                                               20511430 T  0083:3
     SEC3:                                                                          20511440 T  0087:0
          GO TO FUNC[TYPE=UNLOCKV];                                                 20511450 T  0087:0
    FUNCJ:M[OPTN INX 5]←M[OPTN INX 6]←@14;%                                         20511455 T  0091:0
          CMM[2] := " UNLOCK"; CMM[3] := "ED←←    ";%                           20511457 T  0094:3
          GO TO SEC4;%                                                          20511459 T  0097:1
    FUNC0:                                                                      20511460 T  0100:0
          M[OPTN INX 5]:="SMID; M[OPTN INX 6]:= SFID;                           20511470 T  0100:0
          CMM[2]:= " SECURE"; CMM[3]:= "D WITH ";                               20511480 T  0104:1
          M[SFH+2] := P(DUP,LOD,SSB);                                           20511490 T  0106:3
          GO TO SEC4;                                                           20511500 T  0109:1
    FUNC1:                                                                      20511510 T  0112:0
          IF (T1←T1 AND (M[OPTN+2]=0)) THEN M[OPTN+2]←CMM[6];                   20511515 T  0112:0
          SMID:=M[OPTN+5]; SFID:=M[OPTN+6];                                     20511520 T  0117:3
          M[OPTN INX 5]:= M[OPTN INX 6]:=0;                                     20511525 T  0121:3
          CMM[2]←" LOCKED";CMM[3]←" FROM  ";CMM[4]←" WITH :";GO TO SEC4;        20511530 T  0125:2
    FUNC2:                                                                      20511540 T  0133:0
M[OPTN INX 5]←M[OPTN INX 2],[6:42]; M[OPTN INX 2]←M[OPTN INX 6]←0;              20511550 T  0133:0
          CMM[2]:= " FREE F"; CMM[3]:= "ILE←←  "; GO TO SEC4;                   20511560 T  0141:1
    FUNC3:                                                                      20511570 T  0147:0
          M[OPTN INX 5]:=  @14;   M[OPTN INX 6]:= 0;                            20511580 T  0147:0
          CMM[2]:= " PUBLIC";CMM[3]:= " FILE←←";                                20511590 T  0151:0
     SEC4:                                                                      20511600 T  0153:2
          DISKWAIT(OPTN,[CF],30,OPTN,[FF]);                                     20511610 T  0153:2
          P(DIRECTORYSEARCH("CMM[0],CMM[1],14),DEL);                            20511620 T  0155:3
 $ SET OMIT = PACKETS                                                           20511639 T  0158:0
          STREAM(A:=ABS(SMID),B:=SFID,C:=CMM,Q:=(T LSS FREE)%                   20511660 T  0158:0
                AND (T≠UNLOCKV) AND (ABS(SMID)≠12),%                            20511662 T  0160:1
                X:=(SFID=0 OR ABS(SFID)=12) %                                   20511663 T  0162:2
                AND T LSS FREE AND T≠UNLOCKV,%                                  20511664 T  0164:2
                Y←T=LOCKV AND(((N4 EQV MCP)=NOT 0)AND(((CMM[6] EQV MCP)≠        20511665 T  0166:2
                NOT 0)) AND T1,D←OPTN←OPTN INX 0);                              20511666 T  0171:1
          BEGIN SI:=C; SI:=SI+1; DS:=LIT" "; DS:=7 CHR; DS:=LIT"/";             20511670 T  0174:2
                3(SI:=SI+1; DS:=7 CHR);                                         20511680 T  0176:1
                X(DI:=DI-7; DS:=2 LIT"←←");                                     20511685 T  0177:1
                Q(DS:=LIT" ";SI:=LOC A;SI:=SI+1;DS:=7 CHR; DS:=LIT"/";          20511690 T  0178:3
                SI←SI+1; DS←7 CHR);                                             20511700 T  0181:0
                Y(X(DI←DI-18); SI←C;4(SI←SI+8);SI←SI+1;DS←7 CHR;                20511702 T  0181:3
                  SI←SI+9; DS←7 CHR); DS← LIT "←";                              20511704 T  0184:3
          END STREAM;                                                           20511710 T  0186:0
                                                                                                20511670
          SPOUTER(OPTN&CARD[9:9:9],CARD,SECMSG);                                20511720 T  0186:1
 $ SET OMIT = PACKETS                                                           20511729 T  0189:0
     EXYT:                                                                      20511800 T  0189:0
END SECUTITYMAINT;                                                              20511810 T  0189:0
                                                                                                20511140
                                                                                      SIZE= 0192 WORDS
```

```
COMMENT  THE PRT CELL "SHEET" GIVES DISK ADDRESS OF 1ST SHEET ENTRY                20512000 T  0000:0
    *** ENTRIES IN THE SHEET ARE AS FOLLOWS:                                      20512400 T  0000:0
        S[ 0]          = 1ST NAME (7 CHRS)                                        20512800 T  0000:0
             .[ 2:1 ]  = "CANDE" JOB (TSS ONLY)                                   20513200 T  0000:0
        S[ 1]          = 2ND NAME (7 CHRS)                                        20513600 T  0000:0
        S[ 2].[ 1: 2]  = 0 NORMAL                                                 20514000 T  0000:0
                         2 JOB HAS BEEN XS-ED (FORCED RUN)                        20514400 T  0000:0
                         3 JOB HAS BEEN ES-ED (FORCED RUN AND DS)                 20514800 T  0000:0
        S[ 2].[ 4:1 ]  = SUPPRESS BOJ/EOJ MESSAGES FOR SYSTEM JOBS                20515200 T  0000:0
        S[ 2].[ 5:3 ]  = 0 NORMAL, 1 LIBMAIN, 3 LDCNTRL, 5 PRNPBT                 20515400 T  0000:0
        S[ 2].[ 8:10]  = 0 GO JOB (FROM COMPILE & GO)                             20515600 T  0000:0
                       = 1 COMPILER (FOR COMPILE & GO)                            20516000 T  0000:0
                       = 2 EXECUTE JOB                                            20516400 T  0000:0
                       = 3 COMPILER (FOR SYNTAX CHECK)(SET TO 2 LATER)            20516800 T  0000:0
                       = 4 COMPILER (FOR COMPILE TO LIBRARY)                      20517200 T  0000:0
                       = 5 RUN JOB                                                20517600 T  0000:0
        S[ 2].[18:15]  = SKELETONS DISK ADDRESS (IF S[2].[8:10] = 1,2,4           20518000 T  0000:0
        S[ 2].[33:15]  = PRIORITY, SAME AS S[18]                                  20518400 T  0000:0
        S[ 3].[ 1:1 ]  = SET BY SELECTRUN WHEN "SCHEDULED" MESSAGE                20518800 T  0000:0
                         IS SENT (IF SCHEDULED)                                   20519200 T  0000:0
        S[ 3].[ 2: 1]  = 1 RESTART JOB                                            20519600 T  0000:0
        S[ 3].[ 8:10]  = SCHEDULE-ID FOR THIS JOB                                 20520000 T  0000:0
        S[ 5]          = STARTING TIME FOR LOG                                    20520400 T  0000:0
        S[ 6]          = LOCATION OF LAST PART OF LOG                             20520800 T  0000:0
        S[ 7]          = CORE ADDRESS OF SEGMENT ZERO (WHEN THE                   20521200 T  0000:0
                         SHEET IS PASSED TO SELECTRUN AS A PARAMETER)             20521600 T  0000:0
        S[13]          = DISK ADDRESS OF LABEL EQUATION ENTRIES                   20522000 T  0000:0
                         APPLICABLE TO THIS EXECUTION ONLY (SEE BELOW)            20522400 T  0000:0
        S[14]          = ACTUAL MFID OF JOB (TSS ONLY). THIS MAY BE               20522800 T  0000:0
                         BE DIFFERENT FROM S[0] FOR SOME JOBS                     20523200 T  0000:0
                         WHICH ARE STARTED BY CANDE.                              20523600 T  0000:0
        S[15]          = DISK ADDRESS OF LABEL EQUATION ENTRIES                   20524000 T  0000:0
                         PRESENTED WHEN PROGRAM WAS COMPILED AND                  20524400 T  0000:0
                         APPLICABLE TO ALL EXECUTIONS                             20524800 T  0000:0
        S[16]          = ESTIMATED PROCESSOR TIME                                 20525200 T  0000:0
        S[17]          = ESTIMATED I/O TIME                                       20525600 T  0000:0
        S[18]          = PRIORITY                                                 20526000 T  0000:0
        S[19]          = COMMON VALUE                                             20526400 T  0000:0
        S[20]          = ESTIMATED CORE REQUIREMENTS                              20526800 T  0000:0
        S[20].[ 2:1 ]  = "CAN-T EXPAND" BIT (TSS)                                 20527200 T  0000:0
             .[33:15]  = ESTIMATED CORE REQUIREMENT                               20527600 T  0000:0
        S[21]          = STACK SIZE                                               20528000 T  0000:0
        S[22]          = SAVE FACTOR FOR OBJECT FILE (COMPILATIONS)               20528400 T  0000:0
        S[23].[2:6]    = UNITNO OF CARD/PSEUDO READER IN CONTROLCARD.             20528800 T  0000:0
        S[23].[9:9]    = REMOTE STATION ADDRESS, ELSE 0                           20529200 T  0000:0
        S[23].[24:24]  = TIME JOB PUT IN SHEET(FOR TS MSG)                        20529600 T  0000:0
        S[24]          = USER CODE                                                20530000 T  0000:0
        S[25]          = DISK ADDRESS OF FILE HEADER FOR THE JOB                  20530400 T  0000:0
        S[26]          = LOGLINE (TSS)                                            20530800 T  0000:0
        S[27]          = FID FOR COMPILES,TAPE NAME FOR LIBMAIN.                  20531200 T  0000:0
        S[29]          = DISK ADDRESS OF NEXT SHEET ENTRY (=0 IF LAST)            20531600 T  0000:0
    *** ENTRIES FOR LABEL EQAT. ARE AS FOLLOWS:                                   20532000 T  0000:0
        F[0]           = MULTI-FILE ID (7 CHRS)                                   20532400 T  0000:0
        F[1]           = FILE ID       (7 CHRS)                                   20532800 T  0000:0
        F[2].[0:18]    = REEL NO     (3 CHRS)                                     20533200 T  0000:0
        F[2].[18:30]   = CREATION DATE  (5 CHRS)                                  20533600 T  0000:0
        F[3].[0:6]     = CYCLE     (1 CHR)                                        20534000 T  0000:0
```

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          F[3].[15:8]    = NUM COPIES OF PBD OR PUD FILE                                  20534400 T  0000:0
          F[3].[23:1]    = 1, IF "FREEF" PBD PACKET FILE                                  20534800 T  0000:0
          F[3].[42:1]    = 1  FOR FORMS REQUIRED                                          20535200 T  0000:0
          F[3].[43:5]    = 0  FOR CP  (FILE TYPES )                                       20535600 T  0000:0
                           1  FOR LP                                                       20536000 T  0000:0
                           2  FOR MT                                                       20536400 T  0000:0
                           3  FOR SPECIFIC UNIT                                          20536800 T  0000:0
                           4  FOR LP  (MAY BACKUP)                                       20537200 T  0000:0
                           5  FOR SPECIFIC (UNLABLED)                                    20537600 T  0000:0
                           6  FOR LP  (MUST BACKUP)                                      20538000 T  0000:0
                           7  FOR PT                                                     20538400 T  0000:0
                           8  FOR PT (UNLABLED)                                          20538800 T  0000:0
                           9  FOR MT (UNLABLED)                                          20539200 T  0000:0
                          10  FOR DISK                                                   20539600 T  0000:0
          F[4].[0:6]     = NO OF CHARS IN INTERNAL NAME                                   20540000 T  0000:0
          F[4].[6:42]    = INTERNAL NAME (MAY CONTINUE TO F[11])                          20540400 T  0000:0
          F[12].[15:1]   = "SENSITIVE" BIT                                                20540800 T  0000:0
          F[12].[16:2]   = DISK SPEED                                                     20541200 T  0000:0
          F[12].[18:5]   = EU NUMBER + 1                                                  20541600 T  0000:0
          F[14]- F[25]   SAME AS ABOVE FOR NEXT FILE (F[14]=14 IF NO NEXT)                20542000 T  0000:0
          F[29]          = DISK ADRS.OF NXT.LBL.EQUAT.ENTRY(=0 IF NONE)                   20542400 T  0000:0
**** ALSO SEE PROCEDURE "SELECTRUN1" (SEQ.NO.20055600) FOR                                20542800 T  0000:0
**** FURTHER INFORMATION ON LABEL EQUATION AND THE FILE                                   20543200 T  0000:0
**** PARAMETER BLOCK.                                                                    20543600 T  0000:0
                                                                                         20544000 T  0000:0
  **** CONTENTS OF THE JAR:                                                              20544400 T  0000:0
  JAR[0].[ 1:1 ]  =  COMPILE JOB                                                         20544800 T  0000:0
        .[ 2:1 ]  = "CANDE" JOB (TSS ONLY)                                               20545200 T  0000:0
        .[ 6:42]  =  MFID OF THE JOB                                                     20545600 T  0000:0
  JAR[1].[ 1:1 ]  =  JOB IS BEING DS-ED                                                  20546000 T  0000:0
        .[ 2:1 ]  =  JOB IS BEING ES-ED                                                  20546400 T  0000:0
        .[ 6:42]  =  FID OF THE JOB                                                      20546800 T  0000:0
  JAR[2].[ 1:1 ]  =  COBOL JOB                                                           20547200 T  0000:0
        .[ 2:1 ]  =  DECLARED SOFTWARD INTERRUPTS                                        20547600 T  0000:0
        .[ 3:1 ]  =  JOB HAS MAINTENANCE LOG ENTRY                                       20548000 T  0000:0
        .[ 4:1 ]  =  NOT USED                                                            20548400 T  0000:0
        .[ 5:1 ]  =  DECLARED SOFTWARE INTERRUPTS                                        20548800 T  0000:0
        .[ 6:1 ]  =  INVOKED OR INVOKING IPC PROG.FILE                                   20549200 T  0000:0
        .[ 7:1 ]  =  INVOKED IPC PROGRAM FILE                                            20549600 T  0000:0
        .[ 8:10]  =  SAME AS S[2].[8:10] ABOVE                                           20550000 T  0000:0
        .[18:15]  =  DISK ADDRESS FOR THE SKELETON SHEET (COMPILATIONS                   20550400 T  0000:0
        .[33:15]  =  PRIORITY                                                            20550800 T  0000:0
  JAR[3]          =  PROCESS TIME LIMIT                                                  20551200 T  0000:0
  JAR[4]          =  IO TIME LIMIT                                                       20551600 T  0000:0
  JAR[5].[ 1:23]  =  STARTING DATE (OCTAL)                                             20552000 T  0000:0
        .[24:24]  =  STARTING TIME (OCTAL)                                             20552400 T  0000:0
  JAR[6].[ 1:1 ]  =  JOB IS SD-ED                                                      20552800 T  0000:0
        .[ 2:6 ]  =  PSEUDO-READER NUMBER                                              20553200 T  0000:0
        .[18:15]  =  SIZE OF LOG INFORMATION (BATCH)                                   20553600 T  0000:0
        .[33:15]  =  DISK ADDRESS OF FIRST RECORD FOR THE LOG                          20554000 T  0000:0
  JAR[7]          =  IDLETIME ENTRY (BATCH)                                            20554400 T  0000:0
  JAR[7]          =  MFID OF JOB (TSS ONLY). THIS MAY BE DIFFERENT                     20554800 T  0000:0
                      FROM JAR[0] FOR SOME JOBS STARTED BY CANDE.                      20555200 T  0000:0
  JAR[8]          =  LENGTH OF CODE FILE ROW                                           20555600 T  0000:0
  JAR[9].[ 1:1 ]  =  REEL CHANGE IN PROGRESS DUE TO "RC" MESSAGE                       20556000 T  0000:0
        .[ 2:1 ]  =  SUPPRESS PRINTING OF BOJ/EOJ MESSAGES                             20556400 T  0000:0
        .[ 3:1 ]  =  JOB HAS BEEN "STOPPED" (WORKSET ON BATCH)                         20556410 T  0000:0
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                        .[ 4:1 ]  =  KEYBOARD INTERRUPTS ARE ALLOWED                                  20556420 T  0000:0
                        .[ 5:1 ]  =  A KEYBOARD INTERRUPT HAS OCCURRED                                20556430 T  0000:0
                        .[ 6:3 ]  =  0 NORMAL JOB                                                     20556700 T  0000:0
                                  =  1 LIBMAIN                                                        20556710 T  0000:0
                                  =  3 LDCNTRL                                                        20556720 T  0000:0
                                  =  5 PRNPRT -- ODD VALUES FOR BOOLEAN TESTING                       20556730 T  0000:0
                        .[18:15]  =  DISK ADDRESS FOR "CHAIN" IF NON-ZERO                             20556800 T  0000:0
                        .[33:15]  =  NUMBER FOR DISK ROWS IN CODE FILE                                20557200 T  0000:0
                    JAR[10] THROUGH JAR[29] = DISK ADDRESS OF CODE FILE ROWS                          20557600 T  0000:0
                    JAR[30]         = FID OF OBJECT FILE (BATCH COMPILES ONLY)                        20558000 T  0000:0
                    END OF COMMENT;                                                                   20558400 T  0000:0
                REAL PROCEDURE CCLIB;                                                                 20566000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00652
PRT(653) = CCLIB
                    BEGIN LABEL NEXT,LOOP;                                                            20566011 T  0000:0
                    DECLARECCVARIABLES;                                                               20566100 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
```

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STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                REAL CNT          = RETURNVAL+1,   % BEGIN LOCALS TO CCLIB                20566245 T  0000:0
STACK(F+46) = CNT
                     HOLD1        = CNT+1,                                                 20566247 T  0000:0
STACK(F+47) = HOLD1
                     HOLD2        = HOLD1+1,        XI          = HOLD2,                   20566250 T  0000:0
STACK(F+50) = HOLD2
STACK(F+50) = XI
                     HOLD3        = HOLD2+1,                                               20566255 T  0000:0
STACK(F+51) = HOLD3
                     REPEAT       = HOLD3+1,        XLSTSZ      = REPEAT,                  20566260 T  0000:0
STACK(F+52) = REPEAT
STACK(F+52) = XLSTSZ
                     TYM          = REPEAT+1,       HME         = TYM;                     20566265 T  0000:0
STACK(F+53) = TYM
STACK(F+53) = HME
                  BOOLEAN FIRSTIME = TYM+1;                                               20566270 T  0000:0
STACK(F+54) = FIRSTIME
                ARRAY XLST         = FIRSTIME+1[*];                                      20566280 T  0000:0
STACK(F+55) = XLST
                REAL FROMHLD       = XLST+1,                                             20566290 T  0000:0
STACK(F+56) = FROMHLD
                     TOHLD         = FROMHLD+1,                                          20566300 T  0000:0
STACK(F+57) = TOHLD
                     REMEMBER      = TOHLD+1,                                            20566310 T  0000:0
STACK(F+60) = REMEMBER
                     NAMECNT       = REMEMBER+1;                                         20566320 T  0000:0
STACK(F+61) = NAMECNT
                  BOOLEAN DIDGETESPDISK= NAMECNT + 1;                                    20566330 T  0000:0
STACK(F+62) = DIDGETESPDISK
                INTEGER I         = DIDGETESPDISK + 1;                    %148-        20566340 C  0000:0
STACK(F+63) = I
                %*************************************************************************20566350 T  0000:0
                %                                                                       20566352 T  0000:0
                %                                                                       20566354 T  0000:0
                %   CCLIB HAS BEEN EXPANDED TO HANDLE NEW FACILITIES AVAILABLE          20566356 T  0000:0
                %   THROUGH USE OF THE "COPY" CONTROL CARD AND THE EXTENSION OF         20566358 T  0000:0
                %   "EXCEPT" LISTS TO "REMOVE" CONTROL CARDS.                           20566360 T  0000:0
                %                                                                       20566362 T  0000:0
                %                                                                       20566364 T  0000:0
                %   1:  COPY CONTROL CARDS                                              20566366 T  0000:0
                %                                                                       20566368 T  0000:0
                %    PERFORMS SYNTAX ANALYSIS (SEE DOCUMENTATION)                       20566370 T  0000:0
                %                                                                       20566372 T  0000:0
                %    SETS UP LINKED LIST OF ESPDISK SEGMENTS PROVIDING DATA AND         20566374 T  0000:0
                %    NAMES NECESSARY FOR LIBRARY MAINTENANCE PROCESSING                 20566376 T  0000:0
                %    (INCLUDING "EXCEPT" AND "AS" LISTS).                               20566378 T  0000:0
                %                                                                       20566380 T  0000:0
                %                                                                       20566382 T  0000:0
                %   2:  REMOVE CONTROL CARDS                                            20566384 T  0000:0
                %                                                                       20566386 T  0000:0
                %    SCANS "EXCEPT" LIST ASSOCIATED WITH ANY PARTICULAR NAME            20566388 T  0000:0
```

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%    PAIR PASSING SAID LISTS TO PROCEDURE "SEEKNAM", WHICH IN                    20566390 T  0000:0
%    TURN USES THE "EXCEPT" LIST WHEN DETERMINING WHETHER OR                     20566392 T  0000:0
%    NOT TO RETURN SPECIFIC NAMES FOR REMOVAL.                                   20566394 T  0000:0
%                                                                                20566396 T  0000:0
%                                                                                20566398 T  0000:0
%    CMMF19].[2:1]    INDICATES ORIGINATOR                                       20566400 T  0000:0
%           .[3:6]    UNITNO FOR PACKETS                                         20566402 T  0000:0
%           .[9:9]    USER SPECIFIED MAXIMUM NUMBER OF FILES PER                 20566404 T  0000:0
%                     OUTPUT UNIT                                                20566406 T  0000:0
%                                                                                20566408 T  0000:0
%    XLST             DESCRIPTOR TO "EXCEPT" LIST ASSOCIATED WITH                20566410 T  0000:0
%                     A PARTICULAR NAME PAIR                                     20566412 T  0000:0
%                                                                                20566414 T  0000:0
%    REMEMBER         USED FOR CORRECT PLACEMENT OF "FROMHLD",                   20566426 T  0000:0
%                     "TOHLD", OPTIONS AND NAME COUNTS WITHIN THE                20566428 T  0000:0
%                     LINKED LIST OF ESPDISK SEGMENTS...                         20566430 T  0000:0
%             .[3:15] FIRST ESPDISK ADDRESS                                      20566432 T  0000:0
%             .[FF]    OFFSET INTO .[CF]                                         20566434 T  0000:0
%             .[CF]   ESPDISK ADDRESS OF OPTIONS AND NAME COUNT WORD             20566436 T  0000:0
%                                                                                20566438 T  0000:0
%    NAMECNT.[FF]     COUNT OF "EXCEPT" LIST PAIRS AND "AS" CLAUSE               20566440 T  0000:0
%                     PAIRS FOR A PARTICULAR SOURCE                              20566442 T  0000:0
%           .[CF]     COUNT OF NAME PAIRS                                        20566444 T  0000:0
%                                                                                20566446 T  0000:0
%    FROMHLD.[1:5]    INPUT UNIT NUMBER + 1                          %148-       20566448 P  0000:0
%                     IF .[1:5] = 0 THEN INPUT FROM ANY TAPE         %148-       20566449 C  0000:0
%                     THAT HAS THE CORRECT NAME                      %148-       20566450 P  0000:0
%             .[6:42] IF DISK THEN 0                                 %148-       20566451 C  0000:0
%                     IF TAPE THEN TAPE NAME                                     20566452 T  0000:0
%                                                                                20566454 T  0000:0
%    TOHLD.[1:5]      OUTPUT UNIT NUMBER + 1                         %148-       20566455 C  0000:0
%                     IF .[1:5] = 0 THEN OUTPUT TO ANY SCRATCH       %148-       20566456 P  0000:0
%                     TAPE.                                          %148-       20566457 C  0000:0
%                     IF DISK THEN .[40:1] SPECIFIES TYPE FAST                   20566458 T  0000:0
%                                  .[41:1]    "       "   SLOW                   20566460 T  0000:0
%                                  .[42:6]    "     EU #                       20566462 T  0000:0
%                     IF TAPE THEN .[6:42] HAS TAPE NAME             %148-       20566464 P  0000:0
%                                                                                20566466 T  0000:0
%                                                                                20566468 T  0000:0
%*******************************************************************************20566470 T  0000:0
    LABEL CCA,QUIT,POWIE,CHAN,REMO,INCSC,GETEM,ENTE,LCOPY,SEEK,INIT;            20566600 T  0000:0
    LABEL DOWNR,OUTR,SCNX,NEXTL,MIRID;                                          20566610 T  0000:0
    SWITCH SW:=LCOPY,LCOPY,LCOPY,ENTE,ENTE,REMO,CHAN;                           20566620 T  0000:0
    DEFINE ZIPMIX=CARD.[18:6]#;                                                 20566630 T  0000:0
    DEFINE UNITNUM = [1:5]#;                                       %148-       20566640 C  0000:0
    %                                                                           20566650 T  0000:0
    %************************************************                          20566655 T  0000:0
    %                                                                           20566660 T  0000:0
    SUBROUTINE CHECK;                                                           20566665 T  0000:0
    BEGIN                                                                       20566670 T  0001:0
        IF (CNT:=CNT+2) GTR 26 THEN                                             20566675 T  0001:0
        BEGIN                                                                   20566680 T  0002:3
        PROG[29]:=GETESPDISK;                                                   20566685 T  0003:1
        DIDGETESPDISK:=TRUE;                                                    20566687 T  0004:3
        DISKWAIT(PROG INX 0,30,LIBNO);                                          20566690 T  0005:2
        LIBNO:=PROG[29];                                                        20566695 T  0007:2
        CNT:=0;                                                                 20566700 T  0008:2
```

```
      END;                                                                                    20566705 T  0009:1
                                                                                                       20566680
   END;     %  CHECK                                                                        20566710 T  0009:1
                                                                                                       20566670
   %                                                                                       20566744 T  0009:2
   %*************************************************                                      20566745 T  0009:2
   %                                                                                       20566746 T  0009:2
   % - FINAL PREPARATIONS BEFORE EXITING                                                   20566747 T  0009:2
   % - PLACEMENT OF FINAL INPUT SOURCE AND DESTINATION                                     20566748 T  0009:2
   %                                                                                       20566749 T  0009:2
   %*************************************************                                      20566750 T  0009:2
   %                                                                                       20566751 T  0009:2
   SUBROUTINE BOTH;                                                                        20566752 T  0009:2
   BEGIN CMM[0]:="LIBMAIN"; CMM[1]:="DISK    ";                                           20566755 T  0010:0
         CMM[2] := 0 & LIBMAINCODE[5:45:3] & 2[8:38:10]; CMM[13]:=0;                       20566760 T  0012:2
$ SET OMIT = PACKETS                                                                       20566765 T  0017:0
$ SET OMIT = NOT(PACKETS)                                                                  20566780 T  0017:0
         CMM[23]:=0&CARD[9:9:9]&(IF ZIPMIX NEQ 0 THEN PSEUDOMIX[ZIPMIX]                    20566785 T  0017:0
                  ELSE UNITNO)[2:42:6];                                                    20566790 T  0020:2
$ POP OMIT                                                                                 20566795 T  0023:2
         CHECK; PROG[CNT]:=@14;                                                            20566805 T  0023:2
         IF T GEQ COPYN AND T LEQ LOAD THEN                                    %543-       20566807 P  0026:1
          BEGIN PROG[CNT+1]:=FROMHLD; CHECK; PROG[CNT]:=@114;                              20566810 T  0028:0
                IF LIBNO=REMEMBER.[3:15] THEN PROG[1]:=TOHLD;                              20566812 T  0032:1
          END;                                                                             20566815 T  0035:1
                                                                                                       20566810
          OPTN:=CN; PROG[29]:=0;                                               %123-       20566817 C  0035:1
          DISKWAIT(PROG INX 0,30,LIBNO);                                                   20566820 T  0037:1
         IF T GEQ COPYN AND T LEQ LOAD THEN                                    %543-       20566822 P  0039:1
          IF LIBNO NEQ REMEMBER.[3:15] THEN                                                20566825 T  0041:0
           BEGIN DISKWAIT(-PROG.[CF],30,REMEMBER.[3:15]);                                  20566830 T  0042:3
                 PROG[1]:=TOHLD;                                                           20566835 T  0046:0
                 DISKWAIT(PROG INX 0,30,REMEMBER.[3:15]);                                  20566840 T  0047:1
           END;                                                                            20566845 T  0049:3
                                                                                                       20566830
         LIBNO:=ABS(CMM[19]);                                                              20566850 T  0049:3
END OF BOTH;                                                                               20566855 T  0051:0
                                                                                                       20566755
   %                                                                                       20566864 T  0054:0
   %*************************************************                                      20566865 T  0054:0
   %                                                                                       20566866 T  0054:0
   REAL SUBROUTINE SCAN;                                                                   20566875 T  0054:0
        SCAN:=SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,                              20566900 T  0054:0
                  DIRECT);                                                                 20566902 T  0056:0
   REAL SUBROUTINE SKAN;                                                                   20566905 T  0057:1
   BEGIN                                                                                   20566910 T  0058:0
   STREAM(X:=0:CN:=0,ACCUM);                                                               20566915 T  0058:0
   BEGIN                                                                                   20566920 T  0059:3
   SI:=ACCUM;SI:=SI+1;                                                                     20566925 T  0059:3
   8(IF SC GEQ "0" THEN BEGIN SI:=SI+1;TALLY:=TALLY+1; END ELSE                            20566930 T  0060:1
                                                                                                       20566930
     IF SC=" " THEN JUMP OUT ELSE BEGIN TALLY:=0;JUMP OUT END));                           20566935 T  0061:3
                                                                                                       20566935
     CN:=TALLY;SI:=SI-CN;DI:=LOC X;DS:=CN OCT;                                             20566940 T  0064:0
   END;                                                                                    20566945 T  0065:2
                                                                                                       20566920
   SKAN:=P;                                                                                20566950 T  0065:3
```

```
    END OF SKAN;                                                                    20566955 T  0066:0
                                                                                                20566910
    %                                                                               20566984 T  0066:1
    %***************************************************                            20566985 T  0066:1
    %                                                                               20566986 T  0066:1
    % - CREATES AN EXCEPTION LIST OF FILE NAMES WHICH ARE                           20566987 T  0066:1
    %   ASSOCIATED WITH A PARTICULAR PRECEDING FILE NAME                            20566988 T  0066:1
    %                                                                               20566989 T  0066:1
    %***************************************************                            20566990 T  0066:1
    %                                                                               20566991 T  0066:1
    SUBROUTINE SCANEXCEPT;                                                          20567000 T  0066:1
    BEGIN IF XLST=0 THEN XLST:=[M[SPACE(XLSTSZ:=30)]]&30[8:38:10]; %177-            20567005 P  0067:0
SCNX:     IF (XI:=XI+2) GEQ XLSTSZ                                                  20567010 T  0072:3
           THEN BEGIN % EXPAND EXCEPTION LIST SIZE                                  20567015 T  0074:0
                ST:=SPACE(XLSTSZ:=XLSTSZ+30);                                       20567020 T  0075:0
                MOVE(XLSTSZ-30,XLST,ST);                                            20567025 T  0078:1
                FORGETSPACE(XLST);                                                  20567030 T  0080:2
                XLST:=[M[ST]]&XLSTSZ[8:38:10];                                      20567035 T  0081:2
                END;                                                                20567040 T  0083:3
                                                                                                20567015
          IF (CN:=SCAN)=EQUAL                                                       20567045 T  0083:3
           THEN BEGIN XLST[XI]:=-1;                                                 20567050 T  0085:3
                IF HME ≠ 2                                              %792-       20567055 P  0088:0
                THEN BEGIN  IF T1.[46:1] THEN GO POWIE;                 %792-       20567056 C  0088:2
                   XLST[XI] ← IF T1.[45:1] THEN  CMM[0]                 %792-       20567057 C  0090:3
                                           ELSE  PROG[CNT];             %792-       20567058 C  0092:3
                END END                                                 %792-       20567060 P  0094:2
                                                                                                20567056
                                                                                                20567050
           ELSE IF CN GEQ IDENT THEN XLST[XI]:=ACCUM[0]                             20567065 T  0094:2
                                ELSE GO POWIE;                                      20567070 T  0097:0
          IF SCAN NEQ SLASH THEN GO POWIE;                                          20567075 T  0097:3
          IF (CN:=SCAN)=EQUAL                                                       20567080 T  0100:0
           THEN BEGIN IF XLST[XI].[1:1] THEN GO POWIE;                              20567085 T  0101:3
                XLST[XI+1]:=-1;                                                     20567090 T  0104:1
                IF HME ≠ 2                                              %792-       20567095 P  0106:1
                THEN BEGIN  IF T1 THEN GO POWIE;                        %792-       20567096 C  0106:3
                   XLST[XI+1] ← IF T1.[45:1] THEN  CMM[1]               %792-       20567097 C  0108:2
                                             ELSE  PROG[CNT+1];         %792-       20567098 C  0111:0
                END END                                                 %792-       20567100 P  0113:1
                                                                                                20567096
                                                                                                20567085
           ELSE IF CN GEQ IDENT THEN XLST[XI+1]:=ACCUM[0]                           20567105 T  0113:1
                                ELSE GO POWIE;                                      20567110 T  0116:1
          IF (CN:=SCAN)=COMMA THEN GO SCNX                                          20567115 T  0117:0
                              ELSE IF CN NEQ RB THEN GO POWIE;                      20567120 T  0119:0
END;    % SCANEXCEPT                                                               20567125 T  0120:3
                                                                                                20567005
%                                                                       %148-       20567140 C  0121:0
%***************************************************                    %148-       20567142 C  0121:0
%                                                                       %148-       20567144 C  0121:0
% - LOOK FOR TAPE UNIT ASSOCIATED WITH AN INPUT OR                      %148-       20567145 C  0121:0
%   OUTPUT FILE NAME                                                    %148-       20567146 C  0121:0
%                                                                       %148-       20567148 C  0121:0
%***************************************************                    %148-       20567150 C  0121:0
%                                                                       %148-       20567152 C  0121:0
REAL SUBROUTINE SCANON;                                                 %148-       20567154 C  0121:0
```

```
BEGIN IF(CN:=SCAN) ≠ IDENT THEN GO POWIE;                    %148-    20567158 C  0121:0
      CN:=ACCUM[0].[6:18];                                   %148-    20567160 C  0123:2
      FOR I:=0 STEP 1 UNTIL 15 DO                            %148-    20567162 C  0125:0
           IF TINU[I].[30:18]=CN THEN                        %148-    20567166 C  0126:0
           BEGIN                                             %148-    20567168 C  0127:2
                P(I+1);                                      %148-    20567170 C  0128:0
                I:=16;                                       %148-    20567172 C  0128:3
           END;                                              %148-    20567174 C  0129:2
                                                                                  20567168
      IF I≠17 THEN GO TO POWIE;                              %148-    20567176 C  0131:3
      CN:=SCAN;                                              %148-    20567178 C  0133:0
      SCANON:=P;                                             %148-    20567180 C  0134:2
END SCANON;                                                  %148-    20567182 C  0134:3
                                                                                  20567158
%                                                                     20567200 T  0135:0
%*************************************************                    20567201 T  0135:0
%                                                                     20567202 T  0135:0
SUBROUTINE SCANDSKTYP;                                               20567205 T  0135:0
BEGIN                                                                20567210 T  0135:0
     IF (CN:=SCAN)=EU                                                20567215 T  0135:0
      THEN BEGIN                                                     20567220 T  0136:3
           IF (CN:=SCAN) NEQ IDENT THEN GO POWIE;                    20567225 T  0137:2
           IF P(SKAN.DUP) GTR 19 THEN BEGIN P(DEL); GO POWIE; END;   20567230 T  0140:2
                                                                                  20567230
           CN:=P+1; TOHLD.[42:6]:=CN;                                20567235 T  0144:0
           IF CN GTR NEUP.NEUF THEN GO POWIE;                        20567240 T  0146:3
           END                                                       20567245 T  0148:2
                                                                                  20567220
      ELSE IF CN=SLOW THEN TOHLD.[41:1]:=1 ELSE                      20567250 T  0148:2
            IF CN=FAST THEN TOHLD.[40:1]:=1 ELSE                     20567255 T  0152:0
             IF T NEQ COPYN THEN GO POWIE ELSE                       20567260 T  0155:2
              IF CN=DISK THEN ELSE                                   20567265 T  0156:3
               IF CN NEQ IDENT THEN GO POWIE ELSE TOHLD:=ACCUM[0];   20567270 T  0158:2
     IF (CN:=SCAN)=ONV THEN                                  %148-    20567271 C  0161:1
      IF TOHLD.UNITNUM≠0 THEN GO POWIE                       %148-    20567274 C  0163:0
       ELSE                                                  %148-    20567276 C  0164:3
        BEGIN                                                %148-    20567278 C  0164:3
        TOHLD.UNITNUM:=SCANON;                               %148-    20567280 P  0165:1
        END;                                                 %148-    20567282 C  0168:1
                                                                                  20567278
END OF SCANDSKTYP;                                                   20567285 T  0168:1
                                                                                  20567210
%                                                                    20567300 T  0168:2
%************************************************               20567305 T  0168:2
%                                                                    20567310 T  0168:2
% - PLACEMENT OF OPTIONS AND NAME COUNTS INTO CORRECT                20567311 T  0168:2
%   WORD OF CORRECT ESPDISK SEGMENT                                  20567312 T  0168:2
%                                                                    20567313 T  0168:2
%************************************************               20567314 T  0168:2
%                                                                    20567315 T  0168:2
SUBROUTINE SETUP;                                                    20567316 T  0168:2
BEGIN                                                                20567320 T  0169:0
     IF LIBNO NEQ REMEMBER.[CF] THEN                                 20567325 T  0169:0
     BEGIN DISKWAIT(PROG INX 0,30,LIBNO);                            20567330 T  0170:1
     DISKWAIT(-PROG.[CF],30,REMEMBER.[CF]);                          20567335 T  0172:3
     PROG[REMEMBER.[FF]]:=(*P(DUP))&NAMECNT[18:18:15]&NAMECNT[CTC];  20567340 T  0175:2
     DISKWAIT(PROG INX 0,30,REMEMBER.[CF]);                          20567345 T  0178:2
```

```
        DISKWAIT(-PROG.[CF],30,LIBNO);                                          20567350 T  018;0
        END ELSE                                                                20567355 T  018;1
                                                                                         20567330
        PROG[REMEMBER.[FF]]:=(*P(DUP))&NAMECNT[18:18:15]&NAMECNT[CTC];          20567360 T  018;1
    END OF SETUP;                                                               20567365 T  018;3
                                                                                         20567320
    %                                                                           20567510 T  018;0
    %****************  START HERE  ****************                            20567511 T  018;0
    %                                                                           20567512 T  018;0
    P(RCW,MYMSCW,STF);                                                          20567520 T  018;0
    RCW:=RCW & P(XCH)[CTC];                                                     20567530 T  018;1
    P(0,0,0,0,0,0,0,0,0,0,0,0,0);   % ZERO LOCALS OF CCLIB                     20567540 T  018;2
    P(0);                                                          %148-        20567550 C  019;3
    GO SW [T-COPYN];                                                            20567600 T  019;0
LCOPY:                                                                          20569200 T  019;0
FNTF:                                                                           20569230 T  019;0
        PROG[0]:=PROG[2]:=0; CNT:=2;                                            20569240 T  019;0
        IF (CN:=SCAN)=IDENT THEN                                                20569260 T  020;0
        BEGIN                                                                   20569290 T  020;0
         IF (ST:=SKAN)=0 THEN ST:=511 ELSE CN:=SCAN;                            20569320 T  020;2
         IF ST GTR 511 THEN ST:=511;                                            20569350 T  020;2
        END ELSE ST:=511;                                                       20569380 T  021;2
                                                                                         20569290
        REMEMBER.[3:15]:=LIBNO:=GETESPDISK;                                     20569400 T  021;3
        DIDGETESPDISK:=TRUE;                                                    20569410 T  021;1
        CMM[19]:=0&(IF UNITNO=23 OR UNITNO=24 OR UNITNO GEQ 32 THEN             20569420 T  021;0
                    UNITNO ELSE 0)[3:42:6]&ST[9:39:9]&                          20569440 T  021;2
                    LIBNO[CTC]&1[2:47:1];                                       20569460 T  022;3
NEXTL:                                                                          20569520 T  022;3
        FROMHLD.UNITNUM:=19; TOHLD.UNITNUM:=19; % 19=DISK UNITNO+1%148-         20569522 C  022;3
        PROG[CNT+1]:=0;                                                %148-    20569525 P  022;1
        NAMECNT:=0;                                                             20569527 T  023;0
        IF T=ADDV THEN PROG[CNT+1].[6:1]:=1;                                    20569528 T  023;3
        IF T=UNLOAD THEN PROG[CNT+1].[8:1]:=1;                                  20569529 T  023;0
 $ SET OMIT = NOT B6500LOAD                                                     20569530 T  023;1
        IF T NEQ COPYN THEN                                                     20569590 T  023;1
         IF CN=TOV AND T GTR UNLOAD THEN                                        20569610 T  024;0
          SCANDSKTYP;                                                           20569630 T  024;1
        IF CN=LATESTV THEN                                                      20569650 T  024;0
         BEGIN PROG[CNT+1].[5:1]:=1; CN:=SCAN; END;                             20569670 T  024;3
                                                                                         20569670
        IF CN=EXPIRED THEN                                                      20569690 T  024;2
         BEGIN PROG[CNT+1].[4:1]:=1; CN:=SCAN; END;                             20569710 T  025;1
                                                                                         20569710
        IF CN=ACCESSD THEN                                                      20569730 T  025;2
         BEGIN PROG[CNT+1].[3:1]:=1; CN:=SCAN; END;                             20569750 T  025;1
                                                                                         20569750
        IF CN=ADDV THEN                                                         20569770 T  026;2
         BEGIN PROG[CNT+1].[6:1]:=1; CN:=SCAN; END;                             20569780 T  026;1
                                                                                         20569780
        IF CN=NOHASH THEN                                                       20569790 T  026;2
         BEGIN PROG[CNT+1].[7:1]:=1; CN:=SCAN; NAMECNT.[17:1]:=1; END;          20569800 T  026;1
                                                                                         20569800
        IF CN=UNLOAD THEN                                                       20569802 T  027;1
         BEGIN PROG[CNT+1].[8:1]:=1; CN:=SCAN; NAMECNT.[17:1]:=1; END;          20569804 T  027;0
                                                                                         20569804
        IF T NEQ COPYN THEN                                                     20569810 T  028;1
```

```
          IF SCAN NEQ IDENT                                                                  20569830 T  0284:0
           THEN GO POWIE                                                                     20569835 T  0286:1
           ELSE IF T LEQ UNLOAD                                                              20569840 T  0286:2
                 THEN BEGIN TOHLD:=ACCUM[0];                                  %148-          20569845 P  0287:2
                      IF (CN:=SCAN)=ONV THEN TOHLD.UNITNUM:=SCANON;           %148-          20569846 C  0289:1
                      END                                                     %148-          20569847 C  0294:1
                                                                                                          20569845
                 ELSE BEGIN FROMHLD:=ACCUM[0];                                %148-          20569850 P  0294:1
                      IF (CN:=SCAN)=ONV THEN FROMHLD.UNITNUM:=SCANON;                     20569860 C  0295:3
                      END;                                                    %148-          20569870 C  0301:1
                                                                                                          20569850
          REMEMBER:=REMEMBER&LIBNO[CTC]&(CNT+1)[CTF];                                        20569890 T  0301:1
GETEM:                                                                                       20569920 T  0303:2
          CHECK;                                                                             20569925 T  0303:2
          T1.[46:1]←HOLD3←(CN=EQUAL);                                  %543-          20569930 P  0305:0
          IF HOLD3 THEN PROG[CNT]:=-1 ELSE                             %543-          20569935 C  0307:3
          IF CN GEQ IDENT THEN PROG[CNT]:=ACCUM[0] ELSE GO POWIE;      %543-          20569940 P  0310:0
          IF SCAN NEQ SLASH THEN GO POWIE;                                               20569950 T  0313:1
          T1.[47:1]←HOLD3←((CN←SCAN)=EQUAL);                           %543-          20569960 P  0315:0
          IF HOLD3 THEN PROG[CNT+1]:=-1 ELSE                           %543-          20569965 C  0318:3
           IF CN GEQ IDENT THEN PROG[CNT+1]:=ACCUM[0] ELSE GO POWIE;                     20569970 T  0321:2
          NAMECNT.[CF]:=NAMECNT.[CF]+2;                                                  20569975 T  0325:1
          HME:=PROG[CNT].[1:1]+PROG[CNT+1].[1:1];                                        20569980 T  0327:2
          HOLD3:=1;                                                                      20569985 T  0330:3
          IF (CN:=SCAN)=EXCEPT THEN BEGIN CN:=SCAN; HOLD3:=0; END;                       20569990 T  0331:2
                                                                                                          20569990
          IF CN=LB THEN IF HME NEQ 0 THEN                                                20570000 T  0337:1
           BEGIN XI:=-2;                                                                 20570010 T  0339:1
                 SCANEXCEPT;                                                             20570015 T  0340:3
                 FOR ST:=0 STEP 2 UNTIL XI DO                                            20570020 T  0342:0
                 BEGIN CHECK;                                                            20570030 T  0343:0
                       PROG[CNT]:=XLST[ST]&1[5:47:1];                                    20570040 T  0344:0
                       PROG[CNT+1]:=XLST[ST+1]&1[5:47:1];                                20570050 T  0346:2
                       NAMECNT.[FF]:=NAMECNT.[FF]+2;                                     20570055 T  0350:0
                 END;                                                                    20570060 T  0352:1
                                                                                                          20570030
                 CN:=SCAN;                                                               20570065 T  0354:2
              FORGETSPACE(XLST); XLST:=0;                                  %543-          20570070 C  0356:2
           END ELSE GO POWIE                                                             20570080 T  0358:1
                                                                                                          20570010
                   ELSE IF HOLD3=0 THEN GO POWIE;                                        20570090 T  0358:1
          IF CN=AS THEN                                                                  20570100 T  0360:0
           BEGIN                                                                         20570110 T  0360:3
           IF HME=2 OR T=UNLOAD OR NAMECNT.[17:1] THEN GO POWIE;                         20570120 T  0361:1
          IF (CN←SCAN)=EQUAL THEN IF T1.[46:1] THEN                    %543-          20570130 P  0364:3
            BEGIN CHECK; PROG[CNT]:=-1&1[4:47:1]; END ELSE GO POWIE                      20570140 T  0368:1
                                                                                                          20570140
          ELSE IF CN GEQ IDENT THEN IF T1.[46:1] THEN GO POWIE         %543-          20570150 P  0372:2
              ELSE BEGIN CHECK; PROG[CNT]:=ACCUM[0]&1[4:47:1]; END                       20570160 T  0375:0
                                                                                                          20570160
               ELSE GO POWIE;                                                            20570170 T  0379:2
           IF SCAN NEQ SLASH THEN GO POWIE;                                              20570180 T  0379:2
          IF (CN←SCAN)=EQUAL THEN IF T1 THEN                           %543-          20570190 P  0382:0
            PROG[CNT+1]:=-1&1[4:47:1] ELSE GO POWIE                                      20570200 T  0384:3
          ELSE IF CN GEQ IDENT THEN IF T1 THEN GO POWIE                %543-          20570210 P  0388:1
              ELSE PROG[CNT+1]:=ACCUM[0]&1[4:47:1]                                       20570220 T  0390:1
               ELSE GO POWIE;                                                            20570230 T  0392:3
```

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                NAMECNT.[FF]:=NAMECNT.[FF]+2;                                                    20570232 T  039:0
                CN:=SCAN;                                                                        20570235 T  039:1
                END;                                                                             20570240 T  039:2
                                                                                                             20570110
               IF CN=COMMA THEN BEGIN CN:=SCAN; GO GETEM; END;                                   20570250 T  039:2
                                                                                                             20570250
               IF CN=PERIO OR CN=POUND                                                           20570270 T  040:0
               THEN IF T=COPYN THEN GO POWIE ELSE GO QUIT                                        20570280 T  040:1
               ELSE IF T NEQ COPYN                                                               20570290 T  040:0
                    THEN GO POWIE                                                                20570300 T  040:0
                    ELSE IF CN=TOV                                                               20570310 T  040:1
                         THEN BEGIN                                                              20570320 T  040:1
                              FIRSTIME:=TRUE;                                                    20570330 T  040:0
MIRID:                        SCANDSKTYP;                                                        20570340 T  040:3
                              IF FIRSTIME AND (TOHLD.UNITNUM=19)                  %148-          20570350 P  041:0
                              THEN GO POWIE                                                      20570360 T  041:2
                              ELSE IF CN=PERIO OR CN=POUND                                       20570370 T  041:3
                                   THEN GO QUIT ELSE GO POWIE                                    20570380 T  041:3
                              END                                                                20570390 T  041:1
                                                                                                             20570320
                         ELSE IF CN NEQ FROM                                                     20570400 T  041:1
                              THEN GO POWIE                                                      20570410 T  041:1
                              ELSE BEGIN                                                         20570420 T  041:2
                                   IF (CN:=SCAN)=DISK                                            20570430 T  041:0
                                   THEN FIRSTIME:=TRUE                                           20570440 T  041:3
                                   ELSE IF CN NEQ IDENT                                          20570450 T  041:3
                                    THEN GO POWIE ELSE FROMHLD:=ACCUM[0];                        20570460 T  042:1
                                   IF (CN:=SCAN) = ONV THEN                      %148-          20570462 C  042:0
                                    FROMHLD.UNITNUM:=SCANON;                     %148-          20570464 C  042:0
                                   IF CN=POUND OR CN=PERIO                       %148-          20570470 P  042:1
                                   THEN IF FIRSTIME THEN GO POWIE                               20570480 T  042:2
                                                    ELSE GO QUIT                                20570490 T  043:3
                                   ELSE IF CN=TOV                                               20570500 T  043:3
                                        THEN GO MIRID                                           20570510 T  043:3
                                        ELSE IF CN NEQ COMMA                                    20570520 T  043:0
                                             THEN GO POWIE                                      20570530 T  043:0
                                             ELSE BEGIN                                         20570540 T  043:1
                                                  SETUP;                                        20570550 T  043:3
                                                  CHECK; PROG[CNT]:=@14;                        20570560 T  043:0
                                                  PROG[CNT+1]:=FROMHLD;                         20570570 T  043:1
                                                  CN:=SCAN;                                     20570575 T  044:0
                                                  CHECK; PROG[CNT]:=0;                          20570577 T  044:2
                                                  GO NEXTL;                                     20570580 T  044:1
                                                  END;                                          20570590 T  044:3
                                                                                                             20570540
                                   END;                                                         20570600 T  044:3
                                                                                                             20570420
QUIT:                                                                                            20571500 T  044:3
     SETUP; BOTH;                                                                                20571600 T  044:3
      STREAM(A:=TOHLD,B:=TOHLD.[42:6]-1,C:=TOHLD.[42:6]#0,          %122-                        20571700 C  044:0
             D:=[CMM[27]]);                                         %122-                        20571702 C  045:0
         BEGIN                                                      %122-                        20571710 C  045:3
         SI:=LOC A; SKIP SB;                                        %122-                        20571720 C  045:3
         IF SB THEN                                                 %122-                        20571730 C  045:1
            BEGIN                                                   %122-                        20571740 C  045:3
            SKIP 39 SB;                                             %122-                        20571750 C  045:3
            IF SB THEN DS:=8 LIT"OFAST    "                         %122-                        20571760 C  045:0
```

```
                ELSE                                                                %122-      20571770 C  0453:3
                   BEGIN                                                            %122-      20571780 C  0454:0
                   SKIP SB;                                                         %122-      20571782 C  0454:0
                   IF SB THEN DS:=8 LIT"0SLOW    "                                  %122-      20571790 C  0454:1
                   ELSE                                                             %122-      20571800 C  0456:0
                      BEGIN                                                         %122-      20571810 C  0456:1
                      C(SI:=LOC B;                                                  %122-      20571820 C  0456:1
                      DS:=6 LIT"0EU # "; DS:=2 DEC;                                 %122-      20571830 C  0457:0
                      JUMP OUT TO L);                                               %122-      20571840 C  0458:1
                      DS:=8 LIT"0DISK    ";                                         %122-      20571842 C  0459:0
             L:       END                                                           %122-      20571850 C  0460:1
                                                                                                            20571810
                   END                                                              %122-      20571860 C  0460:1
                                                                                                            20571780
                 END                                                                %122-      20571870 C  0460:1
                                                                                                            20571740
             ELSE                                                                   %122-      20571880 C  0460:1
                BEGIN                                                               %122-      20571890 C  0460:2
                SKIP 5 SB;                                                          %122-      20571900 C  0460:2
                DS:=LIT"0"; DS:=7 CHR;                                              %122-      20571910 C  0460:3
                END;                                                                %122-      20571920 C  0461:2
                                                                                                            20571890
             END;                                                                   %122-      20571930 C  0461:2
                                                                                                            20571710
          GO INIT;                                                                             20572100 T  0461:3
       POWIE:                                                                                  20572200 T  0462:1
          IF DIDGETESPDISK THEN                                                                20572210 T  0462:1
          BEGIN                                                                                20572220 T  0463:1
          IF CMM[19].[CF]#LIBNO THEN % MORE THAN ONE SEGMENT USED                              20572300 T  0463:3
          BEGIN                                                                                20572400 T  0465:1
               DISKWAIT(-PROG.[CF],30,CMM[19].[CF]);                                           20572500 T  0465:3
               FORGETESPDISK(CMM[19].[CF]);                                                    20572700 T  0468:3
               CMM[19]←PROG[29];                                                               20572800 T  0470:1
               GO POWIE;                                                                       20572900 T  0471:3
          END;                                                                                 20573000 T  0472:1
                                                                                                            20572400
          FORGETESPDISK(LIBNO);                                                                20573100 T  0472:1
          END;                                                                                 20573110 T  0473:0
                                                                                                            20572220
          GO INCSC;                                                                            20573200 T  0473:0
       REMO:                                                                                   20573300 T  0473:2
          IF XLST NEQ 0 THEN BEGIN FORGETSPACE(XLST); XLST:=0; END;                    %543-      20573350 C  0473:2
                                                                                                            20573350
          T1.[46:1] ← ((CN ← SCAN) = EQUAL);                                           %552-      20573400 P  0477:1
          IF T1.[46:1] THEN  CMM[0]←-1  ELSE                                           %552-      20573402 C  0481:1
          IF CN GEQ IDENT THEN CMM[0]:=ACCUM[0] ELSE GO POWIE;                                  20573410 T  0484:0
          IF SCAN NEQ SLASH THEN GO POWIE;                                                      20573420 T  0487:1
          T1.[47:1] ← ((CN ← SCAN) = EQUAL);                                           %552-      20573430 P  0489:0
          IF T1 THEN  CMM[1]←-1  ELSE                                                  %552-      20573432 C  0492:1
          IF CN GEQ IDENT THEN CMM[1]:=ACCUM[0] ELSE GO POWIE;                                  20573440 T  0494:2
          HME:=CMM[0].[1:1]+CMM[1].[1:1];                                                       20573450 T  0497:3
          X:=-2;                                                                                20573460 T  0500:2
          IF (CN:=SCAN)=PERIO OR CN=COMMA                                                       20573470 T  0501:2
           THEN HOLD1:=CN                                                                       20573480 T  0504:2
           ELSE BEGIN                                                                           20573490 T  0505:2
                IF CN=EXCEPT THEN CN:=SCAN;                                                     20573500 T  0506:3
                IF CN=LB THEN IF HME NEQ 0 THEN ELSE GO POWIE                                   20573510 T  0509:2
```

```
                    ELSE GO POWIE;
               T1.[45:1] ← 1;  % FLAG FOR SCANEXCEPT,  ON REMOVE = %552-
               SCANEXCEPT;
               XLST.[8:10]:=X1+2;
               HOLD1:=SCAN;
               END;

          CN:=T:=0;
          IF (CMM[0] OR CMM[1]) LSS 0 THEN
SEEK:
          SEEKNAM(CMM[0],CMM[1],CN,CMM[2],CMM[3],OPTN,XLST) ELSE
          BEGIN
               CMM[2]:=CMM[0];
               CMM[3]:=CMM[1];
               CN:=1;
          END;

          IF CN NEQ 0
            THEN T:=IF SYSTEMFILE(CMM[2],CMM[3])
                       THEN 2
                       ELSE DIRECTORYSEARCH(CMM[2],CMM[3],5)
            ELSE IF OPTN NEQ 0 THEN GO OUTR;
          IF T GEQ 64 THEN
          BEGIN IF HOLD3:=NOT(M[T+4].[44:1]) THEN BEGIN FORGETSPACE(T);
               T:=DIRECTORYSEARCH(CMM[2],CMM[3]&(UNITNO=25 OR UNITNO=30)
               [1:47:1],4); END;

               IF T GEQ 64 THEN                                    %508-
               IF M[T+4].[43:2]=3 THEN BEGIN FORGETSPACE(T); T:=1; END;

          END;

          IF CARD.[8:1] THEN GO DOWNR;
          IF T LSS 2
            THEN IF T=1
              THEN LBMESS(ABS(CMM[2]),CMM[3],-7,45,0,SPOUTUNIT,LIBERR)
              ELSE LBMESS(CMM[0],CMM[1],-7,15,0,SPOUTUNIT,LIBERR)   %149-
            ELSE IF T=2
              THEN LBMESS(CMM[2],CMM[3],-7,25,0,SPOUTUNIT,LIBERR)   %149-
                   ELSE IF T GEQ 64
                          THEN BEGIN
                               IF M[T+2] NEQ 0 AND (USERID EQV MCP) NEQ
                                  NOT 0 AND (USERID EQV ABS(M[T+2])) NEQ
                                  NOT 0
                                THEN BEGIN
                                     LBMESS(CMM[2],CMM[3],-7,41,
                                            0, SPOUTUNIT, LIBERR);%149-
                                     FORGETSPACE(DIRECTORYSEARCH(CMM[2],
                                                 CMM[3],14));
                                     END

                               ELSE IF M[T+4].[43:2] NEQ 0
                                      THEN BEGIN
                                           IF NOT FIRSTIME THEN
                                            BEGIN FIRSTIME:=1;
                                            CMM[19]:=(LIBNO:=
                                            GETESPDISK)&1[18:44:4];
DOWNR:
```

```
20573520 T  0512:0
20573525 C  0512:0
20573530 T  0513:3
20573540 T  0515:0
20573760 T  0517:2
20573770 T  0519:2
                    20573490
20573850 T  0519:2
20573900 T  0520:3
20574000 T  0522:2
20574100 T  0523:0
20574200 T  0527:2
20574300 T  0528:0
20574400 T  0529:2
20574500 T  0531:0
20574600 T  0531:3
                    20574200
20574700 T  0531:3
20574750 T  0532:0
20574800 T  0534:0
20574850 T  0534:2
20574875 T  0537:1
20574900 T  0539:3
20574905 T  0540:2
20574910 T  0545:0
20574915 T  0547:2
                    20574905
20574917 C  0549:3
20574920 T  0550:2
                    20574920
20574922 T  0555:2
                    20574905
20574925 T  0555:2
20574950 T  0557:0
20575000 T  0557:1
20575050 P  0558:2
20575100 P  0564:2
20575150 T  0570:0
20575200 P  0571:0
20575250 T  0576:3
20575300 T  0577:3
20575350 T  0578:3
20575400 T  0582:1
20575450 T  0585:2
20575500 T  0585:2
20575550 T  0587:0
20575600 P  0589:0
20575650 T  0592:0
20575700 T  0592:3
20575750 T  0594:1
                    20575500
20575800 T  0594:1
20575850 T  0596:3
20575900 T  0597:3
20576000 T  0598:1
20576050 T  0599:2
20576100 T  0600:0
```

```
                                        DIDGETESPDISK:=TRUE;                    20576125 T  0602:2
                                        END;                                    20576150 T  0603:1
                                                                                         20576000
                                       M[T+4].[43:2]:=1;                        20576200 T  0603:1
                                       DISKWAIT(T,[CF],30,T,[FF]);              20576210 T  0606:2
                                       IF HOLD3 THEN FORGETSPACE(               20576215 T  0608:3
                                       DIRECTORYSEARCH(CMM[2],                  20576216 T  0609:3
                                       CMM[3],14));                             20576217 T  0610:2
                                       CHECK;                                   20576220 T  0611:3
                                       PROG[CNT]:=CMM[2];                       20576230 T  0613:0
                                       PROG[CNT+1]:=CMM[3];                     20576240 T  0614:2
                                       END                                      20576250 T  0616:2
                                                                                         20575850
                                  ELSE FORGETSPACE(DIRECTORYSEARCH(             20576300 T  0616:2
                                       CMM[2],CMM[3],6                          20576350 T  0617:1
$ SET OMIT = NOT (PACKETS)                                                      20576395 T  0618:2
                                       &SPOUTUNIT[9:9:9]                        20576400 T  0618:2
                                       &SPOUTUNIT[24:42:6]                      20576405 T  0619:0
$ POP OMIT                                                                      20576410 T  0620:0
                                       ));                                      20576415 T  0620:0
                             FORGETSPACE(T);                                    20576450 T  0621:1
                             END;                                               20576475 T  0622:0
                                                                                         20575300
        IF CN NEQ 0 AND (CMM[0] OR CMM[1]) LSS 0 THEN GO SEEK;                  20576500 T  0622:0
OUTR:   IF (CN:=HOLD1)=COMMA THEN GO REMO;                                      20576600 T  0625:2
        IF CN=PERIO THEN                                                        20576700 T  0627:1
                IF FIRSTIME THEN                                                20576710 T  0628:0
                        BEGIN BOTH;                                             20576720 T  0628:3
                              M[CARDLOC-2]:=0;                                  20576754 T  0630:0
                              M[CARDLOC-1]:=10;                                 20576756 T  0632:0
                              CMM[6]:=GETESPDISK & 10[18:33:15];                20576758 T  0634:0
$ SET OMIT = NOT(DATACOM AND RJE)                                               20576760 T  0636:0
                              DISKWAIT(CARDLOC-2,11,CMM[6] INX 0);              20576768 T  0636:0
                              GO INIT;                                          20576770 T  0638:2
                        END                                                     20576780 T  0639:0
                                                                                         20576720
                                FLSE GO CCA                                     20576790 T  0639:0
                     ELSE GO POWIE;                                             20576800 T  0639:0
   CHAN:                                                                        20576850 T  0639:0
        T:=0; % T USED AS BIT MASK FOR SYNTAX CHECK                             20576900 T  0639:0
        FOR CN:=0 STEP 1 UNTIL 3 DO % SCAN INPUT REQUEST                        20576925 T  0639:3
           BEGIN                                                                20576950 T  0641:0
           OPTN := SCAN;                                                        20576975 T  0641:0
           T := (OPTN=EQUAL) & T[43:44:4]; % SHIFT PREVIOUS VALUE LEFT          20577000 T  0642:2
           IF T THEN CMM[CN] := (-1) ELSE                                       20577025 T  0644:3
           IF OPTN GEQ IDENT THEN CMM[CN] := ACCUM[0] ELSE                      20577050 T  0647:0
           GO TO INCSC; % INCORRECT REQUEST                                     20577075 T  0650:1
           OPTN := SCAN; % SKIP "/","," OR ";"                                  20577100 T  0650:1
           END; % SCANNING INPUT REQUEST                                        20577125 T  0651:2
                                                                                         20576950
        IF (T NEQ 0) AND (T NEQ 5) AND (T NEQ 10) THEN GO INCSC;                20577150 T  0653:3
        % T=5  FOR =/<NAME1> TO =/<NAME2>                                       20577175 T  0657:1
        % T=10 FOR <NAME1>/= TO <NAME2>/=                                       20577200 T  0657:1
        % T=0  FOR <NAME1>/<NAME2> TO <NAME3>/<NAME4>                           20577225 T  0657:1
        IF (REPEAT:=(T GTR 0)) THEN                                             20577250 T  0657:1
           BEGIN                                                                20577275 T  0658:2
           HOLD1 := CMM[0]; HOLD2 := CMM[1]; TYM:=1; CN:=0;                     20577300 T  0659:0
```

```
LOOP:       SEEKNAM(HOLD1,HOLD2,CN,CMM[0],CMM[1],HOLD3,P(0));                    20577325 T  0662:2
            IF CN = 0 THEN % NOT FOUND IN DIRECTORY                              20577350 T  0666:1
               BEGIN                                                             20577375 T  0667:0
               IF TYM = 1 THEN % FIRST PASS, NULL SEARCH                         20577400 T  0667:2
                  BEGIN                                                          20577425 T  0668:1
                  LBMESS(HOLD1, HOLD2, -5, 15, %NOT CHANGED, NOT ON DISK         20577450 T  0668:3
                        0, SPOUTUNIT, LIBERR);                          %149-    20577475 P  0670:1
                  END;                                                           20577500 T  0673:1
                                                                                        20577425
               GO TO NEXT;                                                       20577525 T  0673:1
               END;                                                              20577550 T  0673:3
                                                                                        20577375
            TYM := 2;                                                            20577575 T  0673:3
            IF HOLD1 LSS 0 THEN CMM[2] := CMM[0] ELSE                            20577600 T  0674:2
            IF HOLD2 LSS 0 THEN CMM[3] := CMM[1]; % USE NAME "FOUND"             20577625 T  0677:1
            END;                                                                 20577650 T  0680:2
                                                                                        20577275
         IF (T:=DIRECTORYSEARCH(CMM[2],CMM[3],5)) NEQ 0 THEN                     20577675 T  0680:2
            BEGIN                                                                20577700 T  0683:1
            FORGETSPACE(T);                                                      20577725 T  0683:3
            LBMESS(CMM[0], CMM[1], -5, 29, % NOT CHANGED, DUP FILE               20577750 T  0684:2
                  0, SPOUTUNIT, LIBERR);                            %149-        20577775 P  0686:2
            END ELSE                                                             20577800 T  0689:2
                                                                                        20577700
             BEGIN                                                               20577805 T  0689:2
               T:=IF SYSTEMFILE(CMM[0],CMM[1]) THEN 2 ELSE                       20577810 T  0690:0
                  DIRECTORYSEARCH(CMM[0],CMM[1],5);                              20577815 T  0692:3
               IF T GEQ 64 THEN                                                  20577820 T  0695:0
               BEGIN IF NOT(M[T+4],[44:1]) THEN BEGIN FORGETSPACE(T);            20577823 T  0695:3
                     T←DIRECTORYSEARCH(CMM[0],CMM[1]&(P(UNITNO,DUP)=25 OR        20577826 P  0699:3
                       P(XCH)=30)[1:47:1],4); END;                     %508-    20577827 P  0702:0
                                                                                        20577823
                  IF T GEQ 64 THEN                                     %508-    20577828 C  0704:3
                   IF M[T+4],[43:2]=3 THEN BEGIN FORGETSPACE(T); T:=1;           20577829 T  0705:2
                                        END;                                     20577832 T  0710:2
                                                                                        20577829
               END;                                                              20577833 T  0710:2
                                                                                        20577823
               IF T LSS 2 THEN                                                   20577835 T  0710:2
               LBMESS(CMM[0],CMM[1],-5,15+((T=1)×30), % NOT CHANGED              20577875 T  0711:1
                     % 45 = IN USE, 15 = NOT ON DISK                            20577900 T  0715:1
                     0, SPOUTUNIT, LIBERR)                               %149-    20577925 P  0715:1
            ELSE IF T=2 THEN                                                     20577950 T  0718:0
              LBMESS(CMM[0], CMM[1], -5, 25, % NOT CHANGED, SYSTEM FILE          20577975 T  0719:2
                     0, SPOUTUNIT, 1 )                                   %       20578000 P  0722:0
            ELSE IF M[T+2] NEQ 0 AND                 % NOT FREE FILE              20578025 T  0722:3
             (USERID EQV MCP) NEQ NOT 0 AND          % NOT MCP                    20578050 T  0725:2
             (USERID EQV ABS(M[T+2])) NEQ NOT 0 THEN % NOT CREATOR               20578075 T  0728:0
               BEGIN                                                             20578100 T  0731:1
               LBMESS(CMM[0], CMM[1], -5, 41, % NOT CHANGED, INVALID USER        20578125 T  0731:3
                     0, SPOUTUNIT, 1 );                                  %       20578150 P  0733:3
               IF M[T+4],[43:2] NEQ 1 THEN                                       20578175 T  0734:3
               FORGETSPACE( DIRECTORYSEARCH(CMM[0], CMM[1], 14 ) );              20578200 T  0737:1
               FORGETSPACE(T);                                                   20578210 T  0740:0
               END                                                               20578225 T  0740:3
                                                                                        20578100
            ELSE                                                                 20578250 T  0740:3
```

```
            BEGIN % CHANGE OK                                                    20578275 T  0740:3
            M[T+4]:=(*P(DUP))&3[1:46:2];                                         20578300 T  0741:1
            T:=T&FUF(-CMM[2],CMM[3],T INX 0-1)[18:33:15];                        20578375 T  0744:2
            FORGETSPACE(DIRECTORYSEARCH(CMM[0],CMM[1],8));                       20578400 T  0748:2
            HEADERUNLOCK(CMM[2],CMM[3],T);                                       20578425 T  0750:3
 $ SET OMIT = PACKETS
               LBMESS(CMM[0], CMM[1], 52, % CHANGED TO                           20578450 T  0753:0
                      CMM[2], CMM[3], SPOUTUNIT, LIBMSG);                        20578525 T  0753:0
            PBCOUNT:=PBCOUNT-((((CMM[0] EQV "PBD     ")=NOT 0) OR                20578550 T  0754:2
            (((CMM[0] EQV "PUD     ")=NOT 0)) AND (CMM[1].[CF]=1))               20578575 T  0756:3
            +((((CMM[2] EQV "PRD     ")=NOT 0) OR                               20578600 T  0758:3
            (((CMM[2] EQV "PUD     ")=NOT 0)) AND (CMM[3].[CF]=1));              20578625 T  0762:1
            END;                                                                 20578650 T  0764:2
                                                                                 20578675 T  0769:0
                                                                                                20578275
         END;                                                                    20578685 T  0769:0
                                                                                                20577805
        IF REPEAT THEN GO TO LOOP; % FIND REMAINING FILES                        20578700 T  0769:0
NEXT:                                                                            20578725 T  0770:0
         IF OPTN=COMMA THEN GO CHAN;                                             20579900 T  0770:0
         IF OPTN=PERIO THEN GO TO CCA ELSE GO INCSC;                             20580000 T  0771:1
INIT:    CCLIB:=LIBNO; GO CCA;                                                   20580100 T  0773:0
INCSC:   CCLIB:=1;                                                               20580200 T  0777:0
CCA:     CADDR:=CDEX:=0;                                                         20580300 T  0777:3
         IF XLST NEQ 0 THEN FORGETSPACE(XLST);                                   20580302 T  0779:0
         IF (LIBNO:=PROCVAL).[CF] GTR 1 THEN PROCVAL:=2 ELSE                     20580305 T  0781:2
            IF LIBNO THEN PROCVAL:=6 ELSE PROCVAL:=0;                            20580310 T  0784:2
         RETURNVAL:=PROCVAL;                                                     20580330 T  0787:3
         P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                            20580340 T  0788:2
END; % CCLIB PROCEDURE                                                           20580350 T  0791:1
                                                                                                20566011
                                                                                 SIZE= 0792 WORDS
```

```
                REAL PROCEDURE CCSET; FORWARD;                                  20580400 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00679
PRT(654) = CCSET
                PROCEDURE CCFINISH;                                             20580800 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00679
PRT(655) = CCFINISH
                BEGIN                                                           20580852 T  0000:0
                DECLARECCVARIABLES;                                             20581000 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                  REAL     TEMP        =  RETURNRCW+1;   % BEGIN LOCALS OF CCFINISH   20581080 T  0000:0
STACK(F+45) = TEMP
```

```
P(RCW,MYMSCW,STF);                                                                  20581125 T  0000:0
RCW:=RCW & P(XCH)[CTC];                                                             20581130 T  0001:0
P(0);  % ZERO LOCAL OF CCFINISH                                                     20581140 T  0002:1
PPCPROCESS:=0;                                                                      20581150 T  0002:2
CN:=T;                                                                              20581200 T  0003:1
IF OPTN = PERIO OR OPTN = LIBRA THEN                                                20581250 T  0004:0
BEGIN                                                                               20581300 T  0005:3
     CMM[22]:= PROG[22];                                                            20581350 T  0006:1
     PROG[2].[CF]:= IF PROG[18] > 32767 THEN 32767                                  20581400 T  0007:3
                    ELSE PROG[18];                                                  20581450 T  0009:3
IF PROG[20] > 512 THEN PROG[20]:= 512;                                              20581500 T  0012:1
IF PADDR NEQ 0 THEN                                                                 20581550 T  0015:0
         BEGIN                                                                      20581600 T  0015:3
         PEQN[29]:= 0;                                                              20581650 T  0016:1
         IF PDEX=0 THEN PEQN[0]:=14;                                                20581700 T  0017:2
         IF PDEX=1 THEN PEQN[14]:= 14;                                              20581750 T  0020:0
          DISKWAIT(PEQN,[CF],30,PADDR);                                             20581800 T  0022:2
         END;                                                                       20581850 T  0024:2
                                                                                                  20581600
PROG[29]:= 0;                                                                       20581900 T  0024:2
CMM[2].[FF]:=NT1:=GETESPDISK;                                                       20581950 T  0025:3
DISKWAIT(PROG,[CF],30,NT1);                                                         20582000 T  0028:2
END;                                                                                20582050 T  0030:2
                                                                                                  20581300
IF CADDR NEQ 0 THEN                                                                 20582100 T  0030:2
         BEGIN                                                                      20582150 T  0031:1
         CEQN[29]:= 0;                                                              20582200 T  0031:3
         IF CDEX=0 THEN CEQN[0]:= 14;                                               20582250 T  0033:0
         IF CDEX=1 THEN CEQN[14]:= 14;                                              20582300 T  0035:2
          DISKWAIT(CEQN,[CF],30,CADDR);                                             20582350 T  0038:0
         END;                                                                       20582400 T  0040:0
                                                                                                  20582150
     COMPLEXSLEEP((SCHEDULEIDS≠NOT 0) AND SHEETFREE);                               20582440 T  0040:0
19900670    ACCIDENTAL ENTRY AT 1
     LOCKTOG(SHEETMASK);                                                            20582450 T  0047:0
                                                                                                  20582450
     CDEX:= GETESPDISK;                                                             20582500 T  0050:2
     CMM[2].[CF]:= IF CMM[18] > 32767 THEN 32767 ELSE CMM[18];                      20582550 T  0051:2
     PDEX:= IF CMM[18] > MIXMAX THEN MIXMAX ELSE CMM[18];                           20582600 T  0056:0
     IF LIBNO NEQ 0 THEN CMM[19]:= LIBNO;                                           20582650 T  0059:1
     STREAM(A:=0:S:=P(.SCHEDULEIDS));                                               20582750 T  0061:3
     BEGIN S:=S;                                                                    20582800 T  0063:0
            47(SKIP SB; SKIP DB; TALLY:=TALLY+1;                                    20582850 T  0063:1
               IF SB THEN BEGIN END ELSE JUMP OUT);                                 20582900 T  0064:1
                                                                                                  20582900
            DS:= SET; A:= TALLY;                                                    20582950 T  0065:3
     END STREAM;                                                                    20583000 T  0066:1
                                                                                                  20582800
      TEMP:= P; CMM[3]:= 0&TEMP[8:38:10];                                           20583050 T  0066:2
      CMM[23].[24:24]:=(CLOCK+P(RTR))DIV 60;                                        20583100 T  0069:1
      IF SHEET[PDEX].[CF] NEQ 0 THEN                                                20583150 T  0072:3
         BEGIN                                                                      20583200 T  0074:1
          DISKWAIT(-PROG,[CF],30,PADDR:=SHEET[PDEX].[FF]);                          20583250 T  0074:3
         PROG[29]:= CDEX;                                                           20583300 T  0078:1
          DISKWAIT(PROG,[CF],30,PADDR);                                             20583350 T  0079:2
         END                                                                        20583400 T  0081:2
                                                                                                  20583200
```

```
            ELSE SHEFT[PDEX]:= CDEX;                                    20583450 T  0081:2
            SHEET[PDEX],[18:15]:= CDEX;                                 20583500 T  0084:1
            CMM[29]:= 0;                                                20583550 T  0086:1
           DISKWAIT(CMM,[CF],30,CDEX);                                  20583600 T  0087:2
            UNLOCKTOG(SHEETMASK);                                       20583650 T  0089:2
                                                                                        20583650
            T:= CN;                                                     20583700 T  0093:0
           P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                 20583710 T  0093:3
END CCFINISH;                                                           20583750 T  0096:2
                                                                                        20580852
                                                                              SIZE= 0097 WORDS
```

```
                REAL PROCEDURE CCCOMPILE;                                                    20583800 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00683
PRT(656) = CCCOMPILE
                BEGIN COMMENT SETUP OF COMPILER LABEL EQUATION CODE; PN1/PN2;                 20583860 T  0000:0
                DECLARE CCVARIABLES;                                                         20584000 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                  REAL SUBROUTINE SCAN;                                                      20584150 T  0000:0
                       SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);          20584200 T  0001:0
                  LABEL SKN,EXIT;                                                            20584250 T  0004:1
                  DEFINE ZIPMIX=CARD.[18:6]#;                                                20584275 T  0004:1
                  DEFINE DISKTYPE = 10#;%                                                    20584300 T  0004:1
```

```
P(RCW,MYMSCW,STF);                                                    20584325 T  0004:1
RCW:=RCW & P(XCH)[CTC];                                               20584330 T  0006:1
CCCOMPILE←0;                                          %510-           20584340 C  0007:2
T:=SCAN;%                                                             20584350 T  0008:1
CEQN[0]:=ACCUM[0];%                                                   20584400 T  0009:2
T:=SCAN;%                                                             20584450 T  0011:0
T:=SCAN;%                                                             20584500 T  0012:2
CEQN[1]:=ACCUM[0];%                                                   20584550 T  0014:2
CEQN[2]:=0;%                                                          20584600 T  0016:0
CEQN[3]:=DISKTYPE;%                                                   20584650 T  0017:1
CEQN[4]:=@4234624256060 60;%                                          20584700 T  0018:2
CEQN[12]:=0; % EU/SPEED CELL                          % (SHM)         20584710 T  0019:3
CDEX   :=1;%                                                          20584750 T  0021:0
IF ((UNITNO+1)AND 24)=24 OR UNITNO GEQ 32 THEN%                       20584800 T  0021:3
BEGIN CEQN[14]:=CEQN[16]:=CEQN[17]:=0;%                               20584850 T  0024:2
      CEQN[15]:= "CARD 00" OR ((IF UNITNO GEQ 32 THEN%                20584900 T  0028:1
                  "C/" ELSE @5772) + UNITNO);%                        20584950 T  0029:3
CEQN[18]:=@4232151240000000; CDEX:=2;%                                20585000 T  0032:2
IF UNITNO GEQ 32 THEN CIDROW[UNITNO-32],[3:5]:=1 ELSE%                20585050 T  0034:2
IF UNITNO=23 THEN READERA.[FF] + 1 ELSE                               20585100 T  0038:3
IF UNITNO=24 THEN READERB.[FF] + 1;                                   20585125 T  0047:2
END;                                                                  20585150 T  0050:2
                                                                                     20584850

WHILE (CN:=SCAN) LSS ALGOL OR CN GTR COBOL DO                         20585200 T  0050:2
IF CN=PERIO THEN BEGIN CCCOMPILE:=1; GO EXIT END;                     20585250 T  0054:2
                                                                                     20585250

      IF CN=WITH THEN                                                 20585300 T  0057:2
      IF (CN←SCAN)=PERIO THEN BEGIN CCCOMPILE←1; GO EXIT END;         20585350 T  0058:1
                                                                                     20585350

      IF CN<ALGOL OR CN>COBOL THEN                                    20585355 T  0062:3
       IF(T:=DIRECTORYSEARCH(ACCUM[0],"DISK    ",5))≠0 THEN           20585360 T  0064:2
       BEGIN IF NOT M[T+4].[8:1] THEN                                 20585365 T  0067:2
             BEGIN LBMESS(ACCUM[0],"DISK    ",-22,0,                 20585370 T  0070:1
                          0, SPOUTUNIT, LIBERR);          %149-      20585375 P  0072:2
             FORGETSPACE(T); CCCOMPILE←1; GO EXIT;                    20585380 T  0075:2
             END; FORGETSPACE(T);                                     20585385 T  0079:0
                                                                                     20585370

       END;                                                           20585390 T  0079:3
                                                                                     20585365
COMMENT SET UP NOMINAL VALUES FOR PROGRAM PARAMETERS;%                20585400 T  0079:3
          CMM[0]:=-(CMPLR:=ACCUM[0]); CMM[1]:=CEQN[0];                20585450 T  0079:3
          CMM[2]:=0;                                                  20585500 T  0083:2
          CMM[13]:= CADDR:= GETESPDISK;                               20585550 T  0084:3
 $ SET OMIT = PACKETS                                                 20585599 T  0086:3
 $ SET OMIT = NOT(PACKETS)                                            20585609 T  0086:3
          CMM[23]:=0&CARD[9:9:9]&(IF ZIPMIX NEQ 0 THEN PSEUDOMIX[ZIPMIX] 20585610 T  0086:3
                                  ELSE UNITNO)[2:42:6];               20585620 T  0090:1
 $ POP OMIT                                                           20585621 T  0093:1
          CMM[27]:=CEQN[1]; %FID FOR SCHED MESS.                      20585630 T  0093:1
%   GET OPTION (GO,SYNTAX CHECK, OR LIBRARY)                          20585650 T  0094:3
SKN:      DO OPTN:=SCAN UNTIL OPTN=PERIO OR OPTN=SYNTA OR OPTN=LIBRA  20585700 T  0094:3
          OR OPTN=QUEST; % IN CASE OF HYPHEN IN COMMENT PORTION       20585705 T  0098:3
          IF OPTN=QUEST THEN                                          20585710 T  0100:3
             IF SOURCE=(CARDLOC&1[30:45:3]) THEN                      20585715 T  0101:2
                BEGIN                                                 20585720 T  0103:3
                OPTN:=PERIO; SOURCE:=CARDLOC;                         20585725 T  0104:1
                END ELSE GO TO SKN;                                   20585730 T  0105:3
```

```
                                                                                                                    20585720
        CMM[2].[8:10] := IF OPTN=PERIO THEN 1 ELSE                                                  20585750 T  0105:3
                         IF OPTN=SYNTA THEN 3 ELSE 4;%(OPTN=LIBRA)                                  20585800 T  0108:3
        IF OPTN NEQ SYNTA THEN                                                                      20585850 T  0112:1
% SET UP PROG ARRAY FOR COMPILE AND GO OR COMPILE TO LIBRARY JOBS                                   20585900 T  0113:0
        BEGIN                                                                                       20585950 T  0113:0
             PROG[0]:= CEQN[0];                                                                     20586000 T  0113:2
             PROG[1]:= CEQN[1];                                                                     20586050 T  0115:0
             PROG[2]:=PROG[15]:= 0;                                                                 20586100 T  0116:2
             PROG[16]:=PROG[17]:= @377777777777;                                                    20586150 T  0118:3
             PROG[18]:= (MIXMAX+1) DIV 2;                                                           20586200 T  0121:0
             PROG[19]:= 0;                                                                          20586250 T  0123:1
             PROG[20]:= -1;                                                                         20586300 T  0124:2
             PROG[21]:= 512;                                                                        20586350 T  0126:0
             PROG[22]:= 10;                                                                         20586400 T  0127:1
             PROG[23]:= CMM[23];                                                                    20586450 T  0128:2
             PROG[24]:= USERID;                                                                     20586500 T  0130:0
        END;                                                                                        20586550 T  0131:1
                                                                                                                    20585950
EXIT:   RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                                           20586600 T  0131:1
        P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                                                20586625 T  0132:0
END CCCOMPILE;                                                                                      20586650 T  0134:3
                                                                                                                    20583860
                                                                                                  SIZE= 0137 WORDS
```

```
                REAL PROCEDURE !NITIALIZEIT;                                                    20586700 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00688
PRT(657) = !NITIALIZEIT
                BEGIN LABEL TRYAGAIN,LS,SPLAT,SPOT,EXIT;                                        20586715 T  0000:0
                DECLAREGCVARIABLES;                                                             20586800 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                  REAL     CMM1        =  RETURNVAL+1;   % BEGIN LOCAL TO INITIALIZEIT       20586950 T  0000:0
STACK(F+46) = CMM1
                  REAL SUBROUTINE SCAN;                                                         20587050 T  0000:0
                       SCAN=SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);             20587100 T  0001:0
                        P(RCW,MYMSCW,STF);                                                      20587110 T  0004:1
```

```
      RCW:=RCW & P(XCH)[CTC];                                                    20587120 T  0006:1
      P(0); % ZERO LOCAL TO INITIALIZEIT                                         20587130 T  0007:2
      PROG[13]:=PADDR:=PDEX:=0; % IN CASE PROGRAM NOT IN DIRECTORY               20587150 T  0007:3
TRYAGAIN:                                                                        20587170 T  0010:0
      IF (T:=DIRECTORYSEARCH(ABS(CMM[0]),CMM1:=IF CMM[0] LSS 0 THEN              20587200 T  0010:0
         "DISK    " ELSE CMM[1],3))=0 THEN                                      20587250 T  0012:0
      BEGIN                                                                      20587300 T  0015:3
         IF CMM[2].SSYSJOBF = LIBMAINCODE THEN                                   20587310 T  0016:1
         BEGIN                                                                   20587330 T  0017:3
         ENTERSYSFILE(1);                                                        20587340 T  0018:1
         GO TRYAGAIN;                                                            20587350 T  0019:0
         END;                                                                    20587360 T  0021:0
                                                                                                 20587330
         IF CARD.[9:9]=0 THEN GO TO LS;                                          20587370 T  0021:0
 $ SET OMIT = NOT(DATACOM)                                                       20587399 T  0022:3
               BEGIN                                                             20587500 T  0022:3
LS:            LBMESS(ABS(CMM[0]),CMM1,-15,0,0,SPOUTUNIT,LIBERR);   %149-      20587550 P  0022:3
SPLAT:                                                                           20587650 T  0027:3
               IF UNITNO GEQ 32 THEN BEGIN INITIALIZEIT:=5;GO EXIT END;          20587700 T  0027:3
                                                                                                 20587700
               END;                                                              20587750 T  0030:1
                                                                                                 20587500
          DO T←SCAN UNTIL T>IDENT AND T≤RESETV;                                  20587800 T  0030:1
         IF UNITNO=31 THEN BEGIN INITIALIZEIT:=7; GO EXIT; END;                  20587850 T  0033:3
                                                                                                 20587850
         INITIALIZEIT:=1; GO EXIT;                                               20587950 T  0036:1
      END;                                                                       20587975 T  0037:2
                                                                                                 20587300
      IF M[T INX 4].[9:2]=2 THEN                                                 20588000 T  0037:2
      BEGIN FORGETSPACE(T);                                                      20588010 T  0040:0
         GO TO SPOT;                                                             20588020 T  0041:1
      END;                                                                       20588030 T  0041:3
                                                                                                 20588010
   IF SECURITYCHECK(ABS(CMM[0]),                                                 20588050 T  0041:3
         CMM1,USERID,T)=0 THEN                                                   20588100 T  0042:3
         BEGIN                                                                   20588150 T  0044:1
              OPTN:=0; CMM[2]:=T;                                                20588200 T  0044:3
              P(DIRECTORYSEARCH(NABS(CMM[0]),CMM[1]:=CMM1,13),DEL);              20588250 T  0046:3
              INITIALIZEIT:=4;                                                   20588350 T  0049:3
              GO TO EXIT;                                                        20588360 T  0050:2
         END;                                                                    20588370 T  0051:0
                                                                                                 20588150
          DISKIO(N1,-(PEQN INX 0-1),30,M[T+10]);                                 20588400 T  0051:0
         P(M[T INX 4],[9:2]=3); FORGETSPACE(T);%NOTE FOR BELOW                   20588450 T  0055:1
          CMM[24]:= USERID;                                                      20588500 T  0058:2
          CMM[25]:= T.[FF];                                                      20588550 T  0059:3
          SLEEP([N1],IOMASK);                                                    20588600 T  0061:2
          FOR T:=1 STEP 1 UNTIL 4 DO                                             20588650 T  0063:0
          IF (NOT ABS(PEQN[T]&O[CTC])) NEQ NOT 0 THEN T:= 7;                     20588700 T  0064:0
          IF PEQN[3] GEQ 0 THEN       % SKIP IF RESTART FILE       %106-       20588701 C  0069:3
          IF ABS(PEQN[3])>1023 THEN P(DEL,T←0);  % PRT>1023 NO WAY%202-         20588702 C  0070:3
$ SET OMIT = NOT(BREAKOUT)                                                       20588710 T  0074:0
$ SET OMIT = BREAKOUT                                                            20588730 T  0074:0
          IF PEQN[3].[1:1] THEN P(DEL,T:=0);% CAN-T RESTART;                     20588740 T  0074:0
$ POP OMIT                                                                       20588745 T  0076:2
          IF PEQN[2].[3:1] THEN % I.P.C.                               %110-     20588746 C  0076:2
          IF(PEQN[8]>2) THEN P(DEL,T←0); % I.P.C. - NEEDS PARAMETERS             20588747 C  0077:2
          IF NOT (P OR T) THEN %NOT CODE                                         20588750 T  0080:2
```

```
                BEGIN
SPOT:           LBMFSS(ABS(CMM[0]),CMM1,-19,0,0,SPOUTUNIT,LIBERR);      %149-
                P(DIRECTORYSEARCH(NABS(CMM[0]),CMM1,13),DEL);
                GO TO SPLAT;
                END;

                IF PEQN[61 LSS 0 THEN FOR T:=15 STEP 1 UNTIL 22 DO
                CMM[T]:=PEQN[T] ELSE
                BEGIN
                     CMM[15]:= 0;
                     CMM[16]:= CMM[17]:= @377777777777;
                      CMM[18]:=(MIXMAX+1) DIV 2;
                      CMM[19]:= 0;
                      CMM[20]:= PEQN[7].[FF];
                      CMM[21]:= 512;
                END;

INITIALIZEIT:=3;
EXIT:           RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC
                P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);
END INITIALIZEIT;
```

```
20588800 T  0081:1
20588900 P  0081:3
20589000 T  0086:3
20589150 T  0088:3
20589200 T  0089:1
                    20588800
20589250 T  0089:1
20589300 T  0092:0
20589350 T  0095:3
20589400 T  0096:1
20589450 T  0097:2
20589460 T  0099:3
20589470 T  0102:0
20589480 T  0103:1
20589490 T  0105:1
20589500 T  0106:2
                    20589350
20589550 T  0106:2
20589600 T  0107:1
20589610 T  0108:0
20589650 T  0110:3
                    20586715
              SIZE= 0113 WORDS
```

```
                REAL PROCEDURE CCUNIT;                                                  20589700 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00692
PRT(660) = CCUNIT
                BEGIN LABEL U1,ERROR,EXIT;                                              20589720 T  0000:0
                DECLARECCVARIABLES;                                                     20589800 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                  REAL SUBROUTINE SCAN;                                                 20589950 T  0000:0
                       SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);     20590000 T  0001:0
                        P(RCW,MYMSCW,STF);                                              20590010 T  0004:1
                        RCW:=RCW & P(XCH)[CTC];                                         20590020 T  0006:1
                        T:= SCAN; CN:= ACCUM[0];                                        20590050 T  0007:2
```

```
      T←SCAN; IF T≠EQUAL THEN GO ERROR;                                          20590100 T  0010:2
      FOR T:= 0 STEP 1 UNTIL 31 DO                                               20590150 T  0013:3
          IF CN.[6:18]=TINU[T].[30:18] THEN GO TO U1;                            20590200 T  0015:0
        GO ERROR;                                                                20590250 T  0019:3
U1:   IF LABELTABLE[T] NEQ @314 THEN BEGIN CCUNIT:=6; GO EXIT END;               20590300 T  0020:1
                                                                                                 20590300
      CN:= SCAN;                                                                 20590350 T  0023:0
      MULTITABLE[T]:=RDCTABLE[T]:=0;                                             20590400 T  0024:2
      LABELTABLE[T]:= ACCUM[0];                                                  20590450 T  0026:3
      IF (CN:= SCAN) = SLASH THEN                                                20590500 T  0028:1
         BEGIN MULTITABLE[T]:= LABELTABLE[T];                                    20590550 T  0030:0
               CN←SCAN; LABELTABLE[T]←ACCUM[0]; CN←SCAN;                         20590600 T  0032:0
         END;                                                                    20590610 T  0036:2
                                                                                                 20590550
               IF CN=COMMA THEN                                                  20590650 T  0036:2
               BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>3 THEN GO ERROR;                 20590655 T  0037:1
               STREAM(R←0:KOUNT,ACCUM);                                          20590660 T  0041:3
               BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;                 20590665 T  0043:2
                                                                                                 20590665
               RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[14:38:10];                  20590668 T  0045:0
               IF(CN←SCAN)=COMMA THEN                                            20590670 T  0047:3
               BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>5 THEN GO ERROR;                 20590675 T  0050:0
               STREAM(R←0:KOUNT,ACCUM);                                          20590680 T  0054:3
               BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;                 20590685 T  0056:2
                                                                                                 20590685
               RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[24:31:17];                  20590688 T  0058:0
               IF(CN←SCAN)=COMMA THEN                                            20590690 T  0060:3
               BEGIN IF(CN←SCAN)≠IDENT OR KOUNT>2 THEN GO ERROR;                 20590695 T  0063:0
               STREAM(R←0:KOUNT,ACCUM);                                          20590700 T  0067:3
               BEGIN SI←ACCUM;SI←SI+1;DI←LOC R;DS←KOUNT OCT END;                 20590705 T  0069:2
                                                                                                 20590705
               RDCTABLE[T]←P(XCH,RDCTABLE[T])&P(XCH)[41:41:7];                   20590710 T  0071:0
               END %CYCLE                                                        20590715 T  0073:3
                                                                                                 20590695
               END %CREATION DATE                                                20590720 T  0073:3
                                                                                                 20590675
               END; %REEL NUMBER                                                 20590725 T  0073:3
                                                                                                 20590655
         IF CN≠ PERIO THEN DO CN←SCAN UNTIL CN=PERIO;CCUNIT←0;GO EXIT;            20590730 T  0073:3
ERROR: CCUNIT←6;                                                                 20590740 T  0079:0
EXIT:    RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                       20590750 T  0079:3
         P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                            20590751 T  0080:2
END CCUNIT;                                                                      20590800 T  0083:1
                                                                                                 20589720
                                                                                       SIZE= 0084 WORDS
```

```
                REAL PROCEDURE CCSECMAINT;                                                    20590850 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00695
PRT(661) = CCSECMAINT
                BEGIN LABEL EXIT,CCC;                                                         20590910 T  0000:0
                DECLARECCVARIABLES;                                                           20591000 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                  REAL SUBROUTINE SCAN;                                                       20591350 T  0000:0
                       SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);           20591400 T  0001:0
                            LABEL OPTNO,OPTN1,OPTN2,SEC1,SEC2,SEC5,ST1,                       20591500 T  0004:1
                                  ST2,LS;                                                     20591550 T  0004:1
                            SWITCH SW:=OPTNO,OPTN1,OPTN2;                                     20591600 T  0004:1
```

```
                P(RCW,MYMSCW,STF);                                                    20591610 T  0004:1
                RCW:=RCW & P(XCH)[CTC];                                               20591620 T  0006:1
                GO TO SW[OPTNN];                                                      20591650 T  0007:2
OPTN0:          USERID:= ABS(USERID);                                                 20591700 T  0010:0
                IF SCAN LSS IDENT THEN BEGIN CCSECMAINT:=6;GO EXIT END;               20591750 T  0011:0
                                                                                                  20591750
                SMID:= CMM[0]:= ACCUM[0]; CN:=SCAN;                                   20591800 T  0014:1
                IF SCAN LSS IDENT THEN BEGIN CCSECMAINT:=6; GO EXIT END;              20591850 T  0017:2
                                                                                                  20591850
                SFID:= CMM[1]:= ACCUM[0]; CDEX:= 0;                                   20591900 T  0021:1
                IF (SFH:=DIRECTORYSEARCH(SMID,SFID,4))=0 THEN GO TO LS;               20591950 T  0024:0
                IF NOT(SYSTEMFILE(CMM[CDEX] ,CMM[CDEX+1]) OR                          20592000 T  0026:3
                     (SMID EQV "PBD     ")=NOT 0) AND (M[SFH+5]=0                     20592050 T  0028:3
                     AND M[SFH+2] NEQ 0) THEN                                         20592100 T  0032:1
% INHIBIT USE ON PUBLIC, SECURE FILES                                                 20592150 T  0035:1
                BEGIN CN:=SCAN; GO TO OPTN2 END;                                      20592200 T  0035:1
                                                                                                  20592200
                OPTN:=0; CMM[2]:= SFH;                                                20592250 T  0039:0
                P(DIRECTORYSEARCH(NABS(CMM[0]),CMM[1],14),DEL);                       20592300 T  0041:0
OPTN1:          STREAM(USERID,Q:=USERID>0,B:=[CMM],D:=CN:=SPACE(10));                 20592400 T  0043:1
                BEGIN Q(SI:=LOC USERID; SI:=SI+1;DS:=LIT " "; DS:= 7CHR;);            20592450 T  0047:2
                      DS:= 17LIT " INVALID USER OF "; SI:=B;                          20592500 T  0049:2
                      SI:=SI+1; DS:= 7CHR; DS:=LIT "/"; SI:=SI+1; DS:= 7CHR;          20592550 T  0052:1
                       DS:=LIT".";                                                    20592600 T  0053:3
                END STREAM;                                                           20592650 T  0054:1
                                                                                                  20592450
                SPOUTER( CN&CARD[9:9:9], SPOUTUNIT, 1 );                        %     20592700 P  0054:2
                FORGETSPACE(CMM[2]);                                                  20592725 T  0056:3
                IF OPTN NEQ 0 THEN GO TO SEC5;                                        20592750 T  0057:3
                IF UNITNO GEQ 32 THEN BEGIN CCSECMAINT:=5;GO EXIT END;                20592800 T  0059:0
                                                                                                  20592800
                GO TO CCC;                                                            20592850 T  0061:2
OPTN2:          CMM[5]:=USERID;                                                       20592900 T  0062:0
                ST:= CDEX:= 0;                                                        20592950 T  0063:1
     SEC1:      FOR OPTN:=0 STEP 1 UNTIL 1 DO                                         20593000 T  0064:2
                BEGIN CN:=SCAN;                                                       20593050 T  0066:0
                     IF T=OPEN AND CN=UNLOCKV AND OPTN=0 THEN                         20593060 T  0067:2
                     BEGIN T:=UNLOCKV; GO TO SEC1 END                                 20593100 T  0070:1
                                                                                                  20593100
                      ELSE IF CN LSS IDENT AND CN NEQ EQUAL THEN GO TO ST1;           20593150 T  0072:0
                      CMM[OPTN]:= IF CN=EQUAL THEN -1 ELSE ACCUM[0];                  20593200 T  0075:0
                      CN:=SCAN;                                                       20593250 T  0078:3
                END;                                                                  20593300 T  0080:2
                                                                                                  20593050
               IF CN=WITH THEN BEGIN CN←SCAN;CMM[6]←IF CN≥IDENT THEN ACCUM[0]         20593310 T  0082:3
                              ELSE USERID; CN←SCAN END ELSE CMM[6]←USERID;            20593320 T  0087:2
                                                                                                  20593310
                IF CMM[0] GEQ 0 AND CMM[1] GEQ 0 THEN GO TO SEC2;                     20593350 T  0092:1
                N1:= CMM[0]; N2:= CMM[1]; N3:= 0; ST:= 1;                             20593400 T  0095:1
     ST2:       SEEKNAM(N1,N2,N3,CMM[0],CMM[1],T1,P(0));                              20593450 T  0098:3
                IF N3 NEQ 0 THEN GO TO SEC2;                                          20593500 T  0103:1
                ST:= 0; GO TO SEC5;                                                   20593550 T  0104:2
     SEC2:      IF (ABS(USERID)EQV MCP) NEQ NOT 0 THEN                                20593600 T  0105:3
                IF SYSTEMFILE(CMM[CDEX],CMM[CDEX+1]) OR                               20593650 T  0108:1
                   (CMM[0] EQV "PBD     ")= NOT 0 THEN GO SEC5;                       20593700 T  0111:3
                SECURITYMAINT(T,SMID,SFID,CMM,SFH,SPOUTUNIT);                         20593750 T  0113:2
     SEC5:      IF ST THEN GO TO ST2;                                                 20593800 T  0115:3
```

```
          IF CN=COMMA THEN GO SEC1;                                          20593850 T  0116:3
          IF T=USEV THEN                                                     20593900 T  0118:0
          HEADERUNLOCK(SMID,SFID,SFH);                                       20593950 T  0118:3
          GO TO CCC;                                                         20594000 T  0121:0
LS: LBMFSS(CMM[0],CMM[1],-15,0,0,SPOUTUNIT,LIBERR);              %149-     20594350 P  0123:0
    IF UNITNO GEQ 32 THEN BEGIN CCSECMAINT:=5; GO EXIT END;                  20594400 T  0128:0
                                                                                        20594400
CCC: DO T:=SCAN UNTIL T>IDENT AND T≤RESETV;                                  20594450 T  0130:2
    IF UNITNO=31 THEN BEGIN CCSECMAINT:=7; GO EXIT; END;                     20594500 T  0134:3
                                                                                        20594500
    CCSECMAINT:=1; GO EXIT;                                                  20594550 T  0137:1
ST1:      IF T=USEV THEN                                                     20594600 T  0138:2
          HEADERUNLOCK(SMID,SFID,SFH);                                       20594650 T  0139:1
          CCSECMAINT:=6;                                                     20594700 T  0141:2
EXIT:     RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                  20594750 T  0142:1
          P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                       20594751 T  0143:0
END CCSECMAINT;                                                              20594800 T  0145:3
                                                                                        20590910
                                                                                SIZE= 0147 WORDS
```

```
                    REAL PROCEDURE CCLABEL;                                                    20594850 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00700
PRT(662) = CCLABEL
                    BEGIN LABEL EXIT;                                                          20594870 T  0000:0
                    DECLARECCVARIABLES;                                                        20595000 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                        P(RCW,MYMSCW,STF);                                                     20595080 T  0000:0
                        RCW:=RCW & P(XCH)[CTC];                                                20595090 T  0001:1
                        CN:=0;                                                                 20595150 T  0002:2
                        UNITCODE[UNITNO-23]:= USERID;                                          20595200 T  0003:1
                        MULTITABLE[UNITNO]:= 0;                                                20595250 T  0005:0
```

```
RDCTABLE[UNITNO]:= 1&1[14:38:10];                                          20595300 T  0006:1
IF UNITNO=23 THEN BEGIN CN:=READERA,[FF];READERA:=CARDLOC END              20595350 T  0008:2
                                                                                       20595350
ELSE IF UNITNO=24 THEN BEGIN CN:=READERB,[FF];READERB:=CARDLOC END         20595400 T  0011:3
                                                                                       20595400
ELSE IF UNITNO GEQ 32 THEN BEGIN CN:= CIDROW[UNITNO-32],[3:5];             20595450 T  0015:2
                          CIDROW[UNITNO-32],[3:5]:= 0;                     20595500 T  0019:1
                          CIDROW[UNITNO-32],[18:15]:= CARDLOC;             20595550 T  0022:1
               M[CARDLOC-4],[3:6]:=20;M[CARDLOC-3]:=UNITNO-32;             20595560 T  0024:3
                          END;                                             20595600 T  0030:2
                                                                                       20595450
IF CN THEN BEGIN LABELTABLE[UNITNO]:= "CARD 00" OR                         20595650 T  0030:2
          ((IF UNITNO GEQ 32 THEN "C/" ELSE @5772) + UNITNO);              20595700 T  0032:0
           CCLABEL:=8; GO EXIT;                                            20595750 T  0035:2
          END;                                                             20595800 T  0040:0
                                                                                       20595650
IF T = LABEV THEN BEGIN                                                    20595850 T  0040:0
                  MULTITABLE[UNITNO]:=M[CARDLOC+1],[6:42];                 20595900 T  0041:1
                  STREAM(A:=0,B:=0,C:=0;D:=CARDLOC+3);                     20595950 T  0045:0
                  BEGIN DI:=LOC A; SI:=D;DS:=30CT;                         20596000 T  0047:1
                        DS:=50CT; DS:=20CT; END;                           20596050 T  0048:0
                                                                                       20596000
                  P(P(XCH)&P[24:31:17]&P(XCH)[14:38:10],                   20596100 T  0048:3
                  [RDCTABLE[UNITNO]],+);%                                  20596150 T  0050:3
                  LABELTABLE[UNITNO]:=M[CARDLOC+2],[6:42];                 20596200 T  0051:2
                  END                                                      20596250 T  0055:1
                                                                                       20595850
ELSE IF SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT)             20596300 T  0055:1
GEQ IDENT THEN LABELTABLE[UNITNO]:=ACCUM[0]                                20596350 T  0057:3
     ELSE BEGIN IF UNITNO GEQ 32 THEN                                      20596400 T  0060:1
               CIDROW[UNITNO-32],[18:15]:=0;                               20596450 T  0062:1
               CCLABEL:=6; GO EXIT;                                        20596500 T  0065:1
               END;                                                        20596550 T  0066:2
                                                                                       20596400
          CCLABEL:=6;                                                      20596600 T  0066:2
EXIT:      RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC               20596650 T  0067:1
           P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                    20596651 T  0068:0
END CCLABEL;                                                               20596700 T  0070:3
                                                                                       20594870
                                                                                SIZE= 0072 WORDS
```

```
                    BOOLEAN PROCEDURE CCFIND;                                                    20596750 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00703
PRT(663) = CCFIND
                    BEGIN LABEL FINDX;                                                           20596760 T  0000:0
                    DECLARECCVARIABLES;                                                          20596800 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                    P(RCW,MYMSCW,STF);                                                           20596945 T  0000:0
                    RCW:=RCW & P(XCH)[CTC];                                                      20596947 T  0001:1
                        IF T=ENDFI THEN BEGIN P(0); GO TO FINDX END;                             20596950 T  0002:2
                                                                                                                20596950
                        IF T=DATAV THEN BEGIN P(1); GO TO FINDX; END;                            20597000 T  0004:2
```

```
                    IF T=LABEV THEN BEGIN P(1); GO TO FINDX; END;                                    20597000
                                                                                  20597050 T  0006:2
                                                                                                     20597050
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                             20597100 T  0008:2
          FINDX: CCFIND:=P;                                                       20597450 T  0008:2
          RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                       20597459 T  0009:0
          P([RETURNRCW],STS,P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                 20597460 T  0009:3
END CCFIND;                                                                       20597500 T  0013:0
                                                                                                     20596760
                                                                                          SIZE= 0014 WORDS
```

```
                PROCEDURE CONTROLCARD(CARD); VALUE CARD; REAL CARD;                    20597550 T  000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00704
                BEGIN                                                                  20597600 T  000:0
                    LABEL CC,CCTYPE,COMPILE,INITIALIZATION,BEFORETRYNEXT,TRYNEXT,      20597650 T  000:0
                          CONTROLER,CONTROLA,COMPILEJOB,COMJOB,EXEC,EXRUN,RUN,         20597700 T  000:0
                          USERS,USES,SECBOMB,UNLOX,LOX,FREES,OPENS,ENTE,               20597750 T  000:0
                          LCOPY,CHANGE,REMOVE,UNITI,INCSC,ENDF,ENDECK,SAVEND,          20597800 T  000:0
                          LABE,FINIS,ZIPEXIT,EXIT,SET,RSET,DOWN;                       20597850 T  000:0
                    LABEL CCC,PACK,PACK2,WAIT,ZIPLIST;                                 20597880 T  000:0
                    SWITCH TYPE← UNLOX,USES,LOX,FREES,OPENS,PACK,USERS,                20597900 T  000:0
                                 RUN,COMPILE,EXEC,LCOPY,LCOPY,LCOPY,ENTE,ENTE,REMOVE,  20597950 T  000:0
                                   CHANGE,UNITI,ENDF,WAIT,LABE,LABE,SET,RSET;          20598000 T  000:0
                    SWITCH SW← CC,CCTYPE,INITIALIZATION,BEFORETRYNEXT,SECBOMB,ENDECK,   20599000 T  000:0
                               INCSC,ZIPEXIT,EXIT,PACK2;                               20599100 T  000:0
                    DEFINE ZIPMIX=CARD.[18:6]#, PSOURCE=CARD.[24:6]#;                  20600000 T  000:0
                DECLARECCVARIABLES;                                                    20600010 T  000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDEX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDEX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
```

```
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                    REAL SUBROUTINE SCAN;                                                                    20600020 T  0000:0
                         SCAN:=SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);                       20600040 T  0001:0
                $ SET OMIT = NOT(PACKETS)                                                                    20600099 T  0004:1
                    SUBROUTINE LISTHECARD;                                                                   20600100 T  0004:1
                    IF LASTSCAN.[2:1] THEN                                                                   20600110 T  0005:0
                    IF SPOUTUNIT.[CF] GEQ 32 THEN                                                            20600120 T  0005:3
                    IF T≠PACKET THEN                                                                         20600130 T  0007:2
                    BEGIN                                                                                    20600140 T  0008:3
                         LASTSCAN.[2:1]:=0; ABORT:=CARDLOC;                                                  20600150 T  0009:1
                         IF UNITNO=31 THEN                                                                   20600160 T  0011:3
                         STREAM(E:="END....", CARDLOC);                                                      20600170 T  0012:2
                         BEGIN SI:=CARDLOC; DI:=LOC E; DI:=DI+1;                                             20600180 T  0014:0
                         L1:  IF SC=" " THEN BEGIN SI:=SI+1; GO L1; END;                                     20600190 T  0014:3
                                                                                                                          20600190
                              IF SC="←" THEN GO FINI;                                                        20600200 T  0015:3
                              IF SC=ALPHA THEN                                                               20600210 T  0016:2
                              IF SC="E" THEN                                                                 20600220 T  0017:0
                              BEGIN                                                                          20600230 T  0017:2
                                   IF 3 SC=DC THEN IF SC=ALPHA THEN ELSE                                     20600240 T  0017:2
                                   BEGIN                                                                     20600250 T  0018:3
                                        CARDLOC:=SI; DI:=CARDLOC; DS:=LIT"←";                                20600260 T  0018:3
                                        GO FINI;                                                             20600270 T  0019:3
                                   END;                                                                      20600280 T  0020:0
                                                                                                                          20600250
                                   SI:=SI-3; DI:=DI-3; GO L2;                                                20600290 T  0020:0
                              END ELSE % ALPHANUMERIC                                                        20600300 T  0020:3
                                                                                                                          20600230
                              BEGIN                                                                          20600310 T  0021:0
                               L2:    SI:=SI+1; IF SC=ALPHA THEN GO L2;                                      20600320 T  0021:0
                              END ELSE % SPECIAL CHR                                                         20600330 T  0022:0
                                                                                                                          20600310
                              SI:=SI+1;                                                                      20600340 T  0022:1
                              GO L1;                                                                         20600350 T  0022:2
                         FINI:                                                                               20600360 T  0022:3
                         END;                                                                                20600370 T  0022:3
                                                                                                                          20600180
               ZIPLIST:                                                                                      20600380 T  0023:0
                         STREAM(EOS:=0; CARDLOC:=[ABORT], PPC:=PPCPROCESS,                                   20600390 T  0023:0
                              ZZP:=UNITNO=31, D:=NT1:=SPACE(10));                                            20600400 T  0024:1
                         BEGIN SI:=CARDLOC; SI:=SI+5; SI:=SC;                                                20600410 T  0027:2
                              DS:=LIT">"; PPC(DS:=4LIT">"); ZZP(DS:=2LIT">");                                20600420 T  0028:1
                              2(36(IF SC="←" THEN JUMP OUT 2 TO DUN;                                         20600425 T  0031:2
                              ZZP(IF SC="↑" THEN BEGIN DS:=CHR;                                              20600430 T  0033:1
                         LUP: IF SC=" " THEN BEGIN SI:=SI+1; GO LUP; END;                                    20600435 T  0034:2
                                                                                                                          20600435
                              JUMP OUT 3 TO AGN; END));                                                      20600440 T  0035:2
                                                                                                                          20600430
                              DS:=CHR));                                                                     20600445 T  0036:3
                         AGN: TALLY:=1; EOS:=TALLY;                                                          20600450 T  0037:2
                         DUN: DS:=LIT"←";                                                                    20600455 T  0038:0
                              ZZP(D:=SI; SI:=LOC D; DI:=CARDLOC; DS:=WDS);                                   20600460 T  0038:2
```

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            END;

            SPOUTER(NT1,SPOUTUNIT,64);                                                  20600465 T  0040:1
            IF P AND (UNITNO=31) THEN                                                                20600410
            GO ZIPLIST;                                                                 20600470 T  0040:2
            ABORT:=0;                                                                   20600480 T  0041:3
        END LISTHECARD;                                                                 20600490 T  0042:3
                                                                                        20600500 T  0043:2
    $ POP OMIT                                                                          20600510 T  0044:1
            P(0,0,0,0,0,0,0,0,0,0);%                                                                 20600140
            P(0,0,0,0,0,0,0,0,0,0);%                                                    20600511 T  0046:0
            P(0,0,0,0,0,0,0,0,0,0);%                                                    20600600 T  0046:0
            P(0,0,0,0);                                                                 20600650 T  0048:2
            % DO NOT ZERO THE LAST THREE LOCALS (RETURN-MSCW, RCW, & VAL)               20600700 T  0051:0
            RCW:=RCW & P(..CONTROLCARD,LOD)[CTC];                                       20600750 T  0053:2
            UNITNO := CARD.[2:6];                                                       20600755 T  0054:2
            IF CARD.[33:15] = 0 THEN                                                    20600760 T  0054:2
                BEGIN CARD.[33:15] := GETSPACE(13,0,0)+4;                               20600850 T  0056:0
                IF WAITIO(CARD INX @40000000,@15,UNITNO).[45:3] NEQ 0%                  20600900 T  0057:1
                THEN                                                                    20600950 T  0058:2
                    BEGIN LABELTABLE[UNITNO] := @114;%                                  20601000 T  0061:3
                    RRRMECH := NOT TWO (UNITNO) AND RRRMECH;%                           20601050 T  0064:1
                    FORGETSPACE(CARD INX NOT 1);%                                       20601100 T  0064:2
                    KILL([MSCW]);                                                       20601150 T  0066:1
                    END;                                                                20601200 T  0068:1
                                                                                        20601250 T  0069:3
                END;                                                                    20601300 T  0070:2
                                                                                                 20601100
            COMMENT GET OWN STACK AND GET RID OF INDEPENDENT STACK;%                    20601350 T  0070:2
            COMMENT SET UP ACCUM ARRAY FOR SCAN;%                                                    20600950
            ACCUM:=[M[SPACE(10)]]&10[8:38:10];%                                         20601400 T  0070:2
            ACCUM[0] := 0;%                                                             20601450 T  0070:2
             IF (CCTBLWORD:=P(CCTBLWORD,DUP)&(P.[FF]+1)[CTF]).[FF]>1 THEN               20601500 T  0070:2
             BEGIN                                                                      20601550 T  0074:1
                  IF CCTBLADDR=0 THEN SLEEP([CCTBLWORD],@77777);                        20601600 T  0075:2
                  DIRECT:=[M[CCTBLWORD]]&CCTABLSZ[8:38:10];                             20601620 T  0079:0
             END ELSE                                                                   20601640 T  0079:2
                                                                                        20601660 T  0082:3
             BEGIN                                                                      20601680 T  0085:3
                  DIRECT:=[M[T:=SPACE(CCTABLSZ)]]&CCTABLSZ[8:38:10];                                  20601620
                  DISKWAIT(-T,CCTABLSZ,MESSAGETABLE[3],[22:26]);                        20601700 T  0085:3
                  CCTBLADDR:=T;                                                         20601720 T  0089:0
             END;                                                                       20601740 T  0094:3
                                                                                        20601760 T  0097:3
             CMM:=[M[GETSPACE(130,2,0)+2]]&30[8:38:10];%                                20601780 T  0099:0
             PEQN:=(31 INX (CEQN:=(31 INX(PROG:=(31 INX CMM)))));%                                   20601700
              % PLACE "," IN COL 73 ;%                                                 20601850 T  0099:0
             CARDLOC := CARD INX 0;%                                                    20601900 T  0102:3
             IF UNITNO=25 OR UNITNO=26 OR UNITNO=30 OR UNITNO=31 THEN                   20601950 T  0106:1
             SOURCE:=CARDLOC ELSE                                                       20602000 T  0106:1
             M[(SOURCE:=CARDLOC)+9] := @3277320000000000; % ",", 2B XTRA SAFE          20602050 T  0107:2
             IF UNITNO GEQ 32 AND UNITCODE[UNITNO-23].[1:1] THEN                        20602100 T  0111:1
                UNITCODE[UNITNO-23]:=M[CARDLOC + 10];                                   20602150 T  0112:2
             IF UNITNO=25 OR UNITNO=31 THEN USERID:=MCP ELSE%                           20602200 T  0115:2
             BEGIN IF UNITNO=26 THEN UNITNO:=31;%                                       20602250 T  0118:0
             USERID:=UNITCODE[UNITNO-23];%                                              20602300 T  0121:2
    $ SET OMIT = NOT(DATACOM AND RJE )                                                  20602350 T  0125:1
                                                                                        20602400 T  0129:0
                                                                                        20602409 T  0130:2
```

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        END;%                                                                                    20602450 T  0130:2
                                                                                                            20602350
        SPOUTUNIT:=(                                                                             20602460 T  0130:2
$ SET OMIT = NOT(PACKETS)                                                                        20602469 T  0130:2
                    IF ZIPMIX≠0 AND PSEUDOMIX[ZIPMIX] GEQ 32 THEN                                20602470 T  0130:2
                    PSEUDOMIX[ZIPMIX] ELSE                                                       20602480 T  0133:2
                    IF UNITNO GEQ 32 THEN UNITNO ELSE                                            20602490 T  0135:2
$ POP OMIT                                                                                       20602491 T  0137:2
                    0)&CARD[9:9:9];                                                              20602500 T  0137:2
$ SET OMIT = NOT(PACKETS)                                                                        20602509 T  0139:1
        IF UNITNO GEQ 32 THEN                                                                    20602510 T  0139:1
        IF PKTONLY THEN                                                          %124-           20602515 C  0140:0
        IF PSEUDO[UNITNO-32]=0 THEN                                                              20602520 T  0141:1
        PRINTTHECOVER(CARDLOC&CARD[9:9:9],UNITNO,PSOURCE);                                       20602530 T  0143:1
        LASTSCAN:=0&1[2:47:1];                                                                   20602540 T  0146:2
$ POP OMIT                                                                                       20602541 T  0148:1
COMMENT SCAN FOR CARD WITH QUESTION MARK IN COL. 1;%                                             20602550 T  0148:1
CC:     IF SCAN NEQ QUEST THEN GO TO INCSC;%                                                     20602650 T  0148:1
        T:=SCAN;                                                                                 20602700 T  0150:0
CCTYPE:   IF (T LSS UNLOCKV) OR (T GTR RESETV) THEN                                              20602800 T  0151:2
        GO TO INCSC;%                                                                            20602850 T  0153:1
        PPCPROCESS:=0;%                                                          %173-           20602855 C  0154:0
        PROCVAL:=0;                                                              %128-           20602860 C  0154:3
        IF CARD.[9:9] NEQ 0 THEN%                                                                20602900 T  0155:2
$ SET OMIT = NOT(DATACOM AND RJE )                                                               20602909 T  0156:3
        IF CCFIND THEN GO TO INCSC;                                                              20602950 T  0156:3
        IF (T LEQ LOAD) AND (T GEQ RUNV) THEN                                                    20603000 T  0158:2
            BEGIN %                                                                              20603050 T  0160:1
              M[CARDLOC - 2] := 0;%                                                              20603100 T  0160:3
              M[CARDLOC -1]  :=10;%                                                              20603150 T  0162:3
              CMM[6]:= GETESPDISK & 10[18:33:15];%                                               20603200 T  0164:3
$ SET OMIT = NOT(DATACOM AND RJE )                                                               20603209 T  0166:3
              DISKWAIT(CARDLOC-2,11,CMM[6] INX 0);                                               20603250 T  0166:3
            END;%                                                                                20603350 T  0169:1
                                                                                                            20603050
$ SET OMIT = NOT(PACKETS)                                                                        20603359 T  0169:1
        LISTHECARD;                                                                              20603360 T  0169:1
$ POP OMIT                                                                                       20603361 T  0170:0
%   WRITE OUT CONTROL CARD FOR LOGGING ROUTINE%                                                  20603400 T  0170:0
%   BRANCH ON 1ST WORD ON CONTROL CARD%                                                          20603450 T  0170:0
        LIBNO:=0;                                                                                20603500 T  0170:0
        TOG:= FALSE;                                                                             20603550 T  0170:3
         IF UNITNO GEQ 32 THEN                                                   %780-           20603560 C  0171:2
               IF T=PACKET OR T=USER THEN ELSE                                   %780-           20603565 C  0172:1
                  IF (USERID.[1:1] AND USERID ≠ MCP) THEN                        %780-           20603570 C  0175:0
                        BEGIN   USERID ← "U000000";                              %780-           20603575 C  0178:0
                                UNITCODE[UNITNO-32] ← USERID                     %780-           20603580 C  0179:1
                        END;                                                     %780-           20603590 C  0180:1
                                                                                                            20603575
        GO TO TYPE[T-UNLOCKV];                                                                   20603600 T  0181:0
% COMPILER CALL OUT CARD%                                                                        20603700 T  0194:2
COMPILE: IF CCCOMPILE THEN GO INCSC;                                                             20603750 T  0194:2
INITIALIZATION: OPTNN:=INITIALIZEIT; GO DOWN;                                                    20603900 T  0195:3
BEFORETRYNEXT: IF OPTN=PERIO THEN GO TO CONTROLER;                                               20604050 T  0199:0
TRYNEXT: IF KOUNT=@14 THEN                                                                       20604100 T  0200:1
            IF SOURCE=(CARDLOC&1[30:45:3]) THEN                                                  20604105 T  0201:0
               BEGIN                                                                             20604110 T  0203:1
               PPCPROCESS:=1; T:=SCAN; GO CONTROLA;                                              20604115 T  0203:3
```

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                END;                                                                                    20604120 T  0207:0
                                                                                                                 20604110
          IF SCAN NEQ PERIO THEN GO TRYNEXT;                                                            20604125 T  0207:0
CONTROLER: PPCPROCESS:= 1;                                                                              20604150 T  0209:0
           IF SCAN NEQ QUEST THEN GO TO INCSC;                                                          20604200 T  0209:3
           T:= SCAN;                                                                                    20604250 T  0212:0
CONTROLA: IF (T < FILEV OR T > COBOL) AND ACCUM[0] ≠ CMPLR THEN                      %527-              20604300 P  0213:2
          IF T GEQ UNLOCKV AND T LEQ RESETV THEN                                     %527-              20604350 P  0216:2
          GO TO FINIS ELSE GO TO INCSC;                                                                 20604360 T  0218:3
          IF CARD,[9:9] NEQ 0 THEN                                                                      20604400 T  0219:3
 $ SET OMIT = NOT(DATACOM AND RJE )                                                                     20604409 T  0221:0
          IF CCFIND THEN GO TO INCSC;                                                                   20604450 T  0221:0
 $ SET OMIT = NOT(PACKETS)                                                                              20604479 T  0222:3
        LISTHECARD;                                                                                     20604480 T  0222:3
 $ POP OMIT                                                                                             20604481 T  0224:0
          IF T GEQ ALGOL OR ACCUM[0]=CMPLR THEN                                                         20604500 T  0224:0
           IF OPTN=EXECU OR OPTN=RUNV THEN                                                              20604550 T  0226:0
              GO TO TRYNEXT                                                                             20604600 T  0228:1
           ELSE GO TO COMPILEJOB;                                                                       20604650 T  0228:1
          IF OPTN=SYNTA THEN GO TO TRYNEXT;                                                             20604700 T  0229:1
          IF OPTN=EXECU OR OPTN=RUNV THEN GO TO COMJOB;                                                 20604750 T  0230:2
% CALL PPC FOR COMPILE AND GO JOB%                                                                      20604800 T  0233:0
          IF PPC(PADDR,PEQN,PROG,PDEX,T,UNITNO,CARDLOC,SOURCE,ACCUM,                                    20604850 T  0233:0
                LASTSCAN,DIRECT) THEN GO TO INCSC;                                                      20604900 T  0236:1
          GO TO CONTROLER;                                                                              20604950 T  0238:0
COMPILEJOB: T:=SCAN;                                                                                    20605000 T  0238:2
COMJOB: IF PPC(CADDR,CEQN,CMM,CDEX,T,UNITNO,CARDLOC,SOURCE,ACCUM,                                       20605050 T  0240:2
                LASTSCAN,DIRECT) THEN GO TO INCSC;                                                      20605100 T  0243:3
        GO TO CONTROLER;                                                                                20605150 T  0245:2
COMMENT EXECUTE CARD;%                                                                                  20605250 T  0246:0
EXEC: P(EXECU);                                                                                         20605300 T  0246:0
EXRUN: OPTN:=P;                                                                                         20605320 T  0246:1
        CMM[13]:=CADDR:=CDEX:=0;                                                                        20605340 T  0246:3
        T:=SCAN; CMM[0]:=ACCUM[0];                                                                      20605360 T  0249:0
        T:=SCAN; T:=SCAN;                                                                               20605380 T  0252:0
        IF ((CMM[1]:=ACCUM[0]) EQV "DISK    ") ≠ NOT 0 THEN T := 0                                      20605400 T  0255:2
        ELSE IF ((T := CMM[0]) EQV "LIBMAIN") = NOT 0 THEN                                              20605405 T  0258:3
                IF UNITNO ≠ 3;                                                                          20605410 T  0263:1
 $ SET OMIT = NOT(DATACOM AND RJE)                                                                      20605415 T  0264:0
                THEN GO TO INCSC ELSE T := LIBMAINCODE                                                  20605430 T  0264:0
        ELSE IF (T EQV "PRNPBT ") = NOT 0 THEN                                                          20605435 T  0265:1
                IF UNITNO ≠ 3;                                                                          20605440 T  0269:2
 $ SET OMIT = NOT(DATACOM AND RJE)                                                                      20605445 T  0270:1
                THEN GO TO INCSC ELSE T := PRNPBTCODE                                                   20605460 T  0270:1
        ELSE IF (T EQV "LDCNTRL") = NOT 0 THEN T := LDCNTRLCODE                                         20605465 T  0271:2
        ELSE T := 0;                                                                                    20605470 T  0276:1
        CMM[2] := 0 & (IF OPTN=RUNV THEN 5 ELSE 2)[8:38:10] & T[5:45:3];                                20605480 T  0279:3
        CMM[23]:=0&CARD[9:9:9]&(                                                                        20605500 T  0285:0
 $ SET OMIT = NOT(PACKETS)                                                                              20605509 T  0286:3
                  IF ZIPMIX≠0 THEN PSEUDOMIX[ZIPMIX] ELSE                                               20605510 T  0286:3
 $ POP OMIT                                                                                             20605511 T  0290:0
                                UNITNO)[2:42:6];                                                        20605520 T  0290:0
        GO TO INITIALIZATION;                                                                           20605550 T  0291:2
RUN: P(RUNV);                                                                                           20605600 T  0292:0
     GO TO EXRUN;                                                                                       20605650 T  0292:1
USERS: IF(T:=SCAN)≠EQUAL THEN GO INCSC;                                    %133-                        20605700 P  0292:3
       IF(T:=SCAN)=PERIO THEN GO INCSC;                                    %133-                        20605702 C  0295:2
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      IF (USERID.[1:1] AND USERID≠MCP)                                                  20605750 T  0298:2
 $ SET OMIT = NOT(DATACOM AND RJE )                                                     20605759 T  0299:3
      THEN BEGIN                                                                        20605800 T  0299:3
           USERID:=ACCUM[0];                                                            20605810 T  0301:2
 $ SET OMIT = NOT(PACKETS)                                                              20605819 T  0302:2
           IF UNITNO GEQ 32 THEN UNITCODE[UNITNO-23]:=USERID;                           20605820 T  0302:2
 $ POP OMIT                                                                             20605821 T  0305:2
           END;                                                                         20605830 T  0305:2
                                                                                                    20605800
CCC: %COME HERE TO FLUSH TO NEXT INITIAL WORD                                           20605870 T  0305:2
 $ SET OMIT = NOT(PACKETS)                                                              20605879 T  0305:2
        DO T:=SCAN UNTIL T=QUEST;T:=SCAN;                                               20605880 T  0305:2
 $ POP OMIT                                                                             20605881 T  0310:2
 $ SET OMIT = PACKETS                                                                   20605899 T  0310:2
      GO TO CCTYPE;                                                                     20606000 T  0310:2
USES: OPTNN:=0; OPTNN:=CCSECMAINT; GO DOWN;                                             20606050 T  0311:0
SECBOMB: OPTNN:=1; OPTNN:=CCSECMAINT; GO DOWN;                                          20606100 T  0313:1
UNLOX:                                                                                  20606150 T  0315:2
LOX:                                                                                    20606200 T  0315:2
FREES:                                                                                  20606250 T  0315:2
OPENS:                                                                                  20606300 T  0315:2
      OPTNN:=2; OPTNN:=CCSECMAINT; GO DOWN;                                             20606350 T  0315:2
ENTE::                                                                                  20606400 T  0317:3
LCOPY:                                                                                  20606450 T  0317:3
CHANGE:                                                                                 20606500 T  0318:0
REMOVE:                                                                                 20606550 T  0318:0
      OPTNN:=CCLIB;                                                                     20606600 T  0318:0
DOWN:  GO SW[OPTNN];                                                                    20606610 T  0319:0
SET: TOG:= TRUE;                                                                        20606650 T  0325:0
RSET: IF CCSET THEN GO CC ELSE GO INCSC;                                                20606700 T  0325:3
UNIT: OPTNN:=CCUNIT; GO DOWN;                                                           20606800 T  0327:1
INCSC:                                                                                  20606850 T  0328:3
      IF PPCPROCESS THEN                                                                20606860 T  0328:3
      P(DIRECTORYSEARCH(-CMM[0],IF CMM[0] LSS 0 THEN "DISK    " ELSE                    20606865 T  0329:0
                        CMM[1], 13),DEL);                                               20606870 T  0332:3
 $ SET OMIT = NOT(PACKETS)                                                              20606874 T  0334:0
       LISTHECARD;                                                                      20606875 T  0334:0
 $ POP OMIT                                                                             20606876 T  0335:0
      IF UNITNO≥32 THEN CIDROW[UNITNO-32].[3:5]:=0 ELSE%                  %173-         20606900 C  0335:0
      IF UNITNO=23 THEN READERA.[FF]:=0 ELSE%                             %173-         20606910 C  0339:1
      IF UNITNO=24 THEN READERB.[FF]:=0;%                                 %173-         20606920 C  0343:2
      LASTSCAN := 0;                                                                    20607000 T  0346:2
      STREAM(CARDLOC, U:=TINU[UNITNO], ACCUM, MIX:=ZIPMIX,                              20607020 T  0347:1
            ZZP:=UNITNO=31, CRD:=SPOUTUNIT.[CF]=0,                                      20607040 T  0349:2
            D:=T:=SPACE(15));                                                           20607060 T  0351:2
      BEGIN                                                                             20607080 T  0354:0
           DS:=20LIT"#CONTROL CARD ERROR ";                                             20607100 T  0354:0
           SI:=LOC U; SI:=SI+5; DS:=3 CHR;                                              20607120 T  0356:3
           ZZP(DI:=DI-22; DS:=24LIT"ZIP ERROR, IGNORED, MIX=";                          20607140 T  0357:2
           SI:=LOC MIX; DS:=2 DEC; DS:=LIT":";                                          20607160 T  0361:2
           D:=DI; DI:=DI-3; DS:=FILL; DI:=D);                                           20607180 T  0362:2
           DS:=4LIT" AT ";                                                              20607200 T  0363:3
           SI:=ACCUM; SI:=SI+1;                                                         20607220 T  0364:2
           7(IF SC=" " THEN SI:=SI+1 ELSE DS:=CHR);                                     20607240 T  0365:0
           CRD(DS:=LIT"!"; SI:=CARDLOC; 2(DS:=36 CHR)));                                20607260 T  0366:3
           DS:=LIT"+";                                                                  20607280 T  0369:0
      END;                                                                              20607300 T  0369:2
```

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                                                                                                   20607080
        IF UNITNO≠25 THEN                                                              20607500 T  0369:3
           BEGIN                                                                       20607550 T  0370:2
                 SPOUTER(T&CARD[9:9:9],SPOUTUNIT,1);                                   20607600 T  0371:0
                 IF UNITNO=30 OR UNITNO=31 THEN GO ZIPEXIT;                            20607700 T  0373:1
                 IF UNITNO GEQ 32 THEN GO ENDECK;                                      20607750 T  0375:3
           END ELSE                                                                    20607800 T  0377:0
                                                                                                   20607550
           BEGIN P(WAITIO(T,0,25),DEL);                                                20608000 T  0377:0
                 FORGETSPACE(T);                                                       20608050 T  0379:0
 $ SET OMIT = PACKETS                                                                  20608059 T  0379:3
 $ SET OMIT = NOT(PACKETS)                                                             20608069 T  0379:3
                  FETCH(UNITNO,CARDLOC,SOURCE);                                        20608070 T  0379:3
                  IF SCAN NEQ QUEST THEN GO TO INCSC;                                  20608072 T  0381:0
                  T:=SCAN;                                                             20608074 T  0383:0
                  IF PPCPROCESS THEN GO TO CONTROLA;                                   20608076 T  0384:2
                  IF (T≥PACKET) AND (T≤RESETV) AND (T≠RUNV) THEN     %527-             20608078 P  0385:2
                  GO TO CCTYPE; GO TO INCSC;                                           20608080 T  0388:1
 $ POP OMIT                                                                            20608081 T  0389:2
           END;                                                                        20608100 T  0389:2
                                                                                                   20608000
 $ SET OMIT = NOT(PACKETS)                                                             20608109 T  0389:2
ENDECK:                                                                                20608110 T  0389:2
          IF ZIPMIX NEQ 0 THEN                                       %147-             20608112 C  0389:2
          IF (T:=PSEUDOMIX[ZIPMIX]) GEQ 32 THEN                      %147-             20608114 C  0390:3
             PACKETERR[T-32]:=TRUE;                                  %147-             20608116 C  0393:1
          IF UNITNO GEQ 32 THEN                                                        20608120 T  0396:3
          BEGIN ABORT:=TRUE;                                                           20608130 T  0397:2
          PACKETERR[UNITNO-32]:=TRUE;                                                  20608140 T  0398:3
          GO TO PACK2;                                                                 20608142 T  0401:3
          END;                                                                         20608144 T  0402:1
                                                                                                   20608130
 $ POP OMIT                                                                            20608146 T  0402:1
       DO DO                                                                           20608150 T  0402:1
             FETCH(-UNITNO,CARDLOC,SOURCE)                                             20608200 T  0402:1
          UNTIL SCAN=QUEST                                                             20608250 T  0403:1
       UNTIL SCAN=ENDFI;                                                               20608300 T  0405:1
ENDF::                                                                                 20608450 T  0408:0
 $ SET OMIT = NOT(PACKETS)                                                             20608459 T  0408:0
       IF UNITNO LSS 32 THEN                                                           20608460 T  0408:0
 $ POP OMIT                                                                            20608461 T  0408:3
       IF UNITNO NEQ 30 THEN UNITCODE[UNITNO-23]:=-0;                                  20608500 T  0408:3
          IF UNITNO=23 THEN READERA:=0 ELSE                                            20608510 T  0412:2
          IF UNITNO=24 THEN READERB:=0 ELSE                                            20608520 T  0414:2
         IF UNITNO GEQ 25 THEN                                                         20608550 T  0417:0
         IF UNITNO GEQ 32 THEN                                                         20608600 T  0418:1
PACK2::     %PACKET CARDS END HERE FROM PSEUDO-READERS                                 20608610 T  0419:2
            IF CIDTABLE[UNITNO-32,3] LSS CIDTABLE[UNITNO-32,7]THEN                     20608650 T  0420:0
            BEGIN FETCH(-UNITNO,CARDLOC,SOURCE);                                       20608700 T  0423:1
 $ SET OMIT = NOT(PACKETS)                                                             20608709 T  0425:1
                 IF ABORT THEN                                                         20608710 T  0425:1
                 BEGIN                                                                 20608720 T  0425:2
                       IF (T:=SCAN)=QUEST THEN                                         20608730 T  0426:0
                       IF (T:=SCAN) = ENDFI THEN             %129-                     20608740 P  0428:0
                       ABORT:=FALSE;                                                   20608750 T  0431:0
                       GO TO PACK2;                          %129-                     20608760 P  0432:1
                 END ELSE T:=0;                                                        20608770 T  0432:3
```

```
                    LASTSCAN:=0&1[2:47:1];                                                  20608720
                    PACKETERR[UNITNO-32]:=FALSE;                                    20608780 T  0434:0
 $ POP OMIT                                                                         20608790 T  0435:3
                    GO CC;                                                          20608801 T  0438:3
               END ELSE                                                             20608810 T  0438:3
                                                                                    20608820 T  0441:0
               BEGIN                                                                20608700
 $ SET OMIT = NOT(PACKETS)                                                          20608830 T  0441:0
                    LABELTABLE[UNITNO]:=@114;                                       20608839 T  0441:2
                    IF PACKETACT[UNITNO-32]=0 THEN                                  20608840 T  0441:2
 $ POP OMIT                                                                         20608850 T  0442:3
 $ SET OMIT = PACKETS                                                               20608851 T  0444:3
                    ENDOFDECK((UNITNO-32),SPOUTUNIT&CARD[1:1:1]);                   20608859 T  0444:3
                    GO ZIPEXIT;                                                     20608870 T  0444:3
               END ELSE                                                             20608880 T  0447:3
                                                                                    20608890 T  0448:1
               GO ZIPEXIT;                                                          20608830
               IF(TWO(UNITNO) AND SAVEWORD) NEQ 0 THEN GO TO SAVEND;                20608900 T  0448:1
               IF WAITIO(CARDLOC&400[18:33:15],@15,UNITNO).[45:3] NEQ 0 THEN        20608950 T  0448:1
               BEGIN                                                                20609000 T  0450:2
SAVEND:  LABELTABLE[UNITNO]:= @114;                                                 20609050 T  0453:0
         RRRMECH:= NOT (NT1:= TWO(UNITNO)) AND RRRMECH OR                           20609100 T  0453:3
                   NT1 AND SAVEWORD;                                                20609150 T  0455:0
         GO TO ZIPEXIT;                                                             20609200 T  0457:0
            END;                                                                    20609250 T  0458:2
                                                                                    20609300 T  0459:0
                                                                                    20609050
         M[(SOURCE:= CARDLOC)+9]:= 0&","[1:43:5];                                   20609350 T  0459:0
         USERID:= UNITCODE[UNITNO-23];                                              20609400 T  0462:2
         GO TO CC;                                                                  20609410 T  0464:0
PACK:    IF UNITNO<32 THEN GO INCSC;                                                20609420 T  0466:0
 $ SET OMIT = NOT(PACKETS)                                              %124-       20609425 C  0467:1
            IF PSEUDO[UNITNO-32] = 0 THEN                               %124-       20609430 C  0467:1
               PRINTTHECOVER(CARDLOC,UNITNO,PSOURCE);                   %124-       20609435 C  0468:3
     IF PSOURCE = 3 THEN USERID ←USERID &1[1:47:1];                     %782-       20609436 C  0471:0
 $ POP OMIT                                                             %124-       20609440 C  0474:2
            GO PACK2;                                                               20609450 T  0474:2
LABE: OPTNN:=CCLABEL; GO DOWN;                                                      20609500 T  0475:0
WAIT:                                                                               20609555 T  0476:2
 $ SET OMIT = NOT(PACKETS)                                                          20609559 T  0476:2
       IF UNITNO<32 THEN GO TO CCC;                                                 20609560 T  0476:2
       IF PACKETACT[UNITNO-32]=0 THEN GO TO CCC;                                    20609570 T  0478:1
       LABELTABLE[UNITNO]:=@214; GO TO ZIPEXIT;                                     20609580 T  0480:3
 $ POP OMIT                                                                         20609581 T  0482:2
FINIS::       CCFINISH;                                                             20609600 T  0482:2
 $ SET OMIT = NOT(PACKETS)                                                          20609659 T  0483:2
     IF (NT1←IF ZIPMIX≠0 THEN PSEUDOMIX[ZIPMIX] ELSE UNITNO)                        20609660 T  0483:2
          GEQ 32 THEN PACKETACT[NT1-32]:=PACKETACT[NT1-32]+1;                       20609670 T  0486:3
 $ POP OMIT                                                                         20609671 T  0493:1
            SELECTION;                                                              20609700 T  0493:1
             IF UNITNO NEQ 31 THEN                                                  20609750 T  0494:2
             BEGIN                                                                  20609760 T  0495:1
 $ SET OMIT = PACKETS                                                               20609799 T  0495:3
             GO CCTYPE;                                                             20610100 T  0495:3
             END;                                                                   20610150 T  0498:0
                                                                                            20609760
ZIPEXIT:     FORGETSPACE(CARDLOC-2);                                                20610200 T  0498:0
EXIT::                                                                              20610250 T  0499:1
```

```
 $ SET OMIT = NOT(PACKETS)
          IF ZIPMIX NEQ 0 THEN NYLONZIPPER[ZIPMIX].[2:1]:=1;
 $ POP OMIT
          FORGETSPACE(ACCUM INX 0);%
          FORGETSPACE(CMM INX 0);%
          IF (CCTBLWORD:=P(CCTBLWORD,DUP)&(P.[FF]-1)[CTF]).[FF]=0 THEN
          BEGIN
               FORGETSPACE(CCTBLADDR);
               CCTBLADDR:=0;
          END;

          IF UNITNO GEQ 32 AND UNITNO LEQ 63 THEN
             PSEUDOCOPY:= PSEUDOCOPY - 1;
          KILL([MSCW]);
END CONTROLCARD;
```

```
20610259 T   0499:1
20610260 T   0499:1
20610261 T   0504:3
20610300 T   0504:3
20610350 T   0506:1
20610400 T   0507:3
20610410 T   0511:1
20610420 T   0511:3
20610430 T   0513:0
20610440 T   0514:1
                    20610410
20610500 T   0514:1
20610550 T   0516:0
20610600 T   0517:3
20610650 T   0518:2
                    20597600
          SIZE= 0519 WORDS
```

```
                REAL PROCEDURE CCSET;                                                    20700000 T  0000:0
                                                                  START OF REL SEGMENT: DISK ADDRESS = 00722
                BEGIN LABEL MORE,SEEK,SKIP,CCERR,L1,L2;                                  20701000 T  0000:0
                DECLARECCVARIABLES;                                                      20701500 T  0000:0
STACK(F-2) = MSCW
STACK(F-1) = CARD
STACK(F-1) = MYMSCW
STACK(F+0) = RCW
STACK(F+1) = PROCVAL
STACK(F+2) = A
STACK(F+2) = T
STACK(F+3) = CADDR
STACK(F+3) = SFID
STACK(F+4) = CARDLOC
STACK(F+5) = CDFX
STACK(F+5) = SDEX
STACK(F+6) = CMPLR
STACK(F+7) = CN
STACK(F+10) = KOUNT
STACK(F+11) = LASTSCAN
STACK(F+12) = LIBNO
STACK(F+13) = N1
STACK(F+14) = N2
STACK(F+15) = N3
STACK(F+16) = N4
STACK(F+16) = U
STACK(F+17) = OPTN
STACK(F+20) = OPTNN
STACK(F+21) = PADDR
STACK(F+21) = SFH
STACK(F+22) = PDFX
STACK(F+22) = SMID
STACK(F+23) = PPCPROCESS
STACK(F+24) = SOURCE
STACK(F+25) = SPOUTUNIT
STACK(F+26) = ST
STACK(F+27) = T1
STACK(F+30) = UNITNO
STACK(F+31) = USERID
STACK(F+32) = ACCUM
STACK(F+33) = CEQN
STACK(F+34) = CMM
STACK(F+35) = DIRECT
STACK(F+36) = PEQN
STACK(F+37) = PROG
STACK(F+40) = ADDR
STACK(F+41) = ABORT
STACK(F+42) = TOG
STACK(F+43) = RETURNMSCW
STACK(F+44) = RETURNRCW
STACK(F+45) = RETURNVAL
                REAL     FXTOG      = RETURNVAL+1,   % BEGIN LOCALS OF CCSET          20702000 T  0000:0
STACK(F+46) = FXTOG
                         LOK        = FXTOG+1,                                        20702100 T  0000:0
STACK(F+47) = LOK
                         N          = LOK+1,                                          20703000 T  0000:0
STACK(F+50) = N
```

```
                    SENSETOG    =  N+1;                                                    20704000 T  0000:0
STACK(F+51) = SENSETOG
              BOOLEAN FT=N; DEFINE FH(FH1)=M[T+FH1]#;  % RESET FILE A/B          %815-    20704100 C  0000:0
STACK(F+50) = FT
              SUBROUTINE CLEARTHEFILE;  % CLEAR AN IN-USE FILE                  %815-    20704200 C  0000:0
              BEGIN                                                              %815-    20704210 C  0001:0
                   FH[4].[01:06]←0;    % EXCLUSIVE                             %815-    20704220 C  0001:0
                   FH[4].[16:20]←0;    % OPEN COUNT 2                          %815-    20704230 C  0004:1
                   FH[9].[01:28]←0;    % TOGS & OPEN COUNT 1                   %815-    20704240 C  0007:2
                   DISKWAIT(T,[CF],30,T,[FF]);       % FIX IT                  %815-    20704250 C  0010:3
                   FILEHOLD(CMM[2],CMM[3],0,T,0);    % WAKE UP WAITING PROCESSES %815-  20704260 C  0013:0
                   LBMESS(CMM[2],CMM[3],11,26,0,SPOUTUNIT,1);                    %815-    20704270 C  0016:2
              END CLEARTHEFILE;                                                  %815-    20704280 C  0019:1
                                                                                                      20704210
              REAL SUBROUTINE SCAN;                                                        20705000 T  0019:2
                   SCAN←SCN(UNITNO,CARDLOC,SOURCE,ACCUM,KOUNT,LASTSCAN,DIRECT);            20706000 T  0020:0
                   P(RCW,MYMSCW,STF);                                                      20707000 T  0023:1
                   RCW:=RCW & P(XCH)[CTC];                                                 20708000 T  0025:1
                   P(0,0,0,0); % ZERO LOCALS OF CCSET                                      20709000 T  0026:2
                   CCSET←0;                                                      %510-     20711100 C  0027:2
                   IF NOT (FXTOG:=(CN:=SCAN)=FIXED) THEN                                   20712000 T  0028:1
                   IF NOT (SENSETOG:=(CN=SENSE)) THEN                                      20713000 T  0030:3
                   IF CN≠ACCESSD THEN                                            %815-     20714000 P  0032:3
                       IF NOT (FT←FXTOG←(CN=FILEV)) THEN GO TO CCERR;            %815-     20714500 C  0034:0
              MORE:                                                                        20715000 T  0036:3
                   IF (CN:=SCAN)=EQUAL THEN CMM[0]:=-1 ELSE                                20716000 T  0036:3
                   IF CN GEQ IDENT THEN CMM[0]:=ACCUM[0] ELSE GO CCERR;                    20717000 T  0041:0
                   IF SCAN NEQ SLASH THEN GO TO CCERR;                                     20718000 T  0044:1
                   IF (CN:=SCAN)=EQUAL THEN CMM[1]:=-1 ELSE                                20719000 T  0046:0
                   IF CN GEQ IDENT THEN CMM[1]:=ACCUM[0] ELSE                              20720000 T  0050:0
                   GO TO CCERR;                                                            20721000 T  0053:1
                   CN:=T:=0;                                                               20722000 T  0053:1
              SEEK:                                                                        20723000 T  0054:2
                   IF (CMM[0] OR CMM[1]) LSS 0 THEN                                        20724000 T  0054:2
                   SEEKNAM(CMM[0],CMM[1],CN,CMM[2],CMM[3],N,P(0)) ELSE                     20725000 T  0056:1
                   BEGIN CN:=1; CMM[2]:=CMM[0]; CMM[3]:=CMM[1] END;                        20726000 T  0061:1
                                                                                                      20726000
                   IF CN NEQ 0 THEN                                                        20727000 T  0065:2
                   BEGIN                                                                   20728000 T  0066:1
                        IF NOT FXTOG THEN IF SYSTEMFILE(CMM[2],CMM[3]) THEN                20729000 T  0066:3
                        BEGIN T←2; GO TO L1; END;                                  %521-   20730000 P  0069:1
                                                                                                      20730000
                        T:=DIRECTORYSEARCH(CMM[2],CMM[3],19);                              20731000 T  0071:0
                   END ELSE IF N=0 THEN BEGIN CMM[2]:=CMM[0]; CMM[3]:=CMM[1]; GO L1;       20732000 T  0073:1
                                                                                                      20728000
                                    END                                                    20733000 T  0078:2
                                                                                                      20732000
                                ELSE GO L2;                                                20734000 T  0078:2
              SKIP:                                                                        20735000 T  0078:2
                        IF T GEQ 64 THEN                                                   20736000 T  0078:2
                          BEGIN                                                            20737000 T  0079:1
                          IF M[T+4].[43:2]=3 THEN                                          20738000 T  0079:3
                            BEGIN FORGETSPACE(T); T←1; GO SKIP; END;               %521-   20739000 P  0082:1
                                                                                                      20739000
                          IF (USERID EQV MCP)= NOT 0 OR                                    20740000 T  0084:3
                             (USERID EQV ABS(M[T+2]))= NOT 0 OR                            20741000 T  0087:0
                             (NOT SENSETOG AND (M[T+2]=0)) THEN                            20742000 T  0090:1
```

```
                BEGIN                                                                   20743000 T  0093:1
                LOK:=0;                                                                 20744000 T  0093:3
                IF FXTOG                                                                20745000 T  0094:2
                  THEN M[T+4].[42:1]:=TOG                                               20746000 T  0094:2
                  ELSE IF SENSETOG                                                      20747000 T  0097:0
                         THEN IF LOK:=((M[T+4].[43:2]=1) AND NOT TOG)                   20748000 T  0099:0
                                THEN M[T+4].[43:2]:=0                                   20749000 T  0102:1
                                ELSE IF M[T+4].[43:2]=1                                 20750000 T  0105:1
                                       THEN ELSE M[T+4].[43:2]:=TOG*2                   20751000 T  0109:3
                         ELSE BEGIN                                                     20752000 T  0113:1
                              M[T+4].[11:1]:=TOG;                                       20753000 T  0115:2
                              IF TOG THEN %                                %503-      20753800 C  0118:3
                              BEGIN %                                      %503-      20753900 C  0119:0
                              STREAM(DATE,J:=5);                                        20754000 T  0119:2
                               BEGIN S1:=LOC DATE; DS:=80CT; END;                       20755000 T  0120:2
                                                                                                    20755000
                              M[T+3].[12:18]:=JUNK;                                     20756000 T  0121:1
                              END; %                                       %503-      20756100 C  0124:2
                                                                                                    20753900
                              END;                                                      20757000 T  0124:2
                                                                                                    20752000
                DISKWAIT(T,[CF],-30,T,[FF]);                                            20758000 T  0124:2
$ SET OMIT = SHAREDISK                                                                  20759000 T  0127:0
                UNLOCKDIRECTORY;                                                        20760000 T  0127:0
                                                                                                    20760000
                                                                                                    20760000
$ POP OMIT                                                                              20761000 T  0130:2
$ SET OMIT = PACKETS                                                                    20762000 T  0130:2
                 IF LOK THEN P(DIRECTORYSEARCH(-CMM[2],CMM[3],6),DEL)                   20765000 T  0130:2
                        ELSE LBMESS(CMM[2],CMM[3],IF TOG THEN 12 ELSE 11,               20766000 T  0133:2
                             13+(SENSETOG*47)-(FXTOG*3),0,SPOUTUNIT,RSTOG)              20767000 T  0138:0
              END ELSE  IF FT THEN CLEARTHEFILE ELSE BEGIN                  %815-       20769000 P  0140:3
                                                                                                    20743000
 $ SET OMIT = SHAREDISK                                                     %521-       20769100 P  0144:2
                  UNLOCKDIRECTORY;                                          %521-       20769200 C  0144:2
                                                                                                    20769200
                                                                                                    20769200
 $ POP OMIT                                                                 %521-       20769300 C  0148:0
                  LBMESS(CMM[2],CMM[3],-(11+TOG),41,0,SPOUTUNIT,1);         %521-       20769400 C  0148:0
                  END;                                                      %521-       20769500 C  0151:2
                                                                                                    20769000
                 FORGETSPACE(T);                                            %521-       20769600 C  0151:2
                END                                                                     20770000 T  0152:1
                                                                                                    20737000
                 ELSE BEGIN                                                 %521-       20771000 P  0152:1
 $ SET OMIT = SHAREDISK                                                     %521-       20771010 C  0154:0
                  UNLOCKDIRECTORY;                                          %521-       20771020 C  0154:0
                                                                                                    20771020
                                                                                                    20771020
 $ POP OMIT                                                                 %521-       20771030 C  0157:2
L1:              LBMESS(CMM[2],CMM[3],-(11+TOG),15+((T=1)*30)+((T=2)*10),                20771100 T  0157:2
                       0, SPOUTUNIT, 1 );                                   %           20772000 P  0162:3
                  END;                                                      %521-       20772050 C  0164:0
                                                                                                    20771000
     IF CN NEQ 0 AND (CMM[0] OR CMM[1]) LSS 0 THEN GO SEEK;                             20779000 T  0164:0
L2:  IF (CN:=SCAN)=COMMA THEN GO MORE;                                                  20780000 T  0167:2
     IF CN=PERIO THEN CCSET:=1;                                                         20781000 T  0170:2
```

```
CCERR: RETURNVAL:=PROCVAL; % ADJUST RESULT OF TYPED PROC                 20782000 T  0172:2
       P([RETURNRCW],STS,0,RDS,0,XCH,P&P[CTF],STF);                     20783000 T  0173:1
END CCSET;                                                              20784000 T  0176:0
                                                                                        20701000
                                                                              SIZE= 0178 WORDS
```

```
                    $ SET OMIT = NOT(DATACOM )                                                    20999999 T  0000:0
                   REAL SECONDCTR;                                                                22000000 T  0000:0
PRT(664) = SECONDCTR
                    $ SET OMIT = NOT(SHAREDISK)                                                   22000499 T  0000:0
                    PROCEDURE NSECOND;%                                                           22001000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00728
                          BEGIN REAL RCW=+0, I=RCW+1, X=I+1, J=X+1;                               22002000 T  0000:0
STACK(F+0) = RCW
STACK(F+1) = I
STACK(F+2) = X
STACK(F+3) = J
                              REAL MSCW=-2;                                                       22002500 T  0000:0
STACK(F-2) = MSCW
                              ARRAY A=J+1[*];                                                     22003000 T  0000:0
STACK(F+4) = A
                    $ SET OMIT = NOT SHAREDISK                                                    22003990 T  0000:0
                              P(0,0,0,0);                                                         22006000 T  0000:0
                    $ SET OMIT = NOT SHAREDISK                                                    22006090 T  0001:0
                              IF (J:=TOGLE.MEMNO)≠0 THEN                                          22007000 T  0001:0
                                TOGLE.MEMNO:=IF J THEN 6 ELSE J-2;                                22007100 T  0002:3
                              A ← [M[SPACE(3×MIXMAX+3)]]&90[8:38:10];                             22008000 T  0007:0
                    $ SET OMIT = NOT(DCLOG AND DATACOM )                                          22008049 T  0011:3
                              SLEEP([TOGLE],ABORTMASK);                                           22009000 T  0011:3
                              LOCKTOG(ABORTMASK);                                                 22010000 T  0013:1
                                                                                                                22010000
                              HALT; IDLETIME;%                                                    22011000 T  0016:3
                              J:=NEUP.NEUF ;                                                      22011100 T  0017:3
                    $ SET OMIT = NOT(SHAREDISK )                                                  22011190 T  0019:0
                              FOR I:=J-1 STEP -1 UNTIL 0 DO                                       22011300 T  0019:0
                               BEGIN                                                              22011400 T  0023:1
                                EUIO[I+EUIOFFSET]:=*P(DUP)×EUTAPER+PEUIO[I];                      22011500 T  0023:1
                                PEUIO[I]:=0;                                                      22011600 T  0026:2
                               END;                                                               22011700 T  0027:3
                                                                                                                22011400
          $ SET OMIT = NOT(SHAREDISK )                                                            22011790 T  0030:0
                              WHILE (J:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;              22012000 T  0030:0
                                                                                                                22012000
                              CHANGEDATE(0);                                                      22012500 T  0037:2
                              A[0]←J; A[2]←"ABORT";J←0;                                           22013000 T  0038:1
                              A[1] ← DATE;%                                                       22014000 T  0041:2
                              IF (CLOCK AND @17777)=0 THEN                                        22014100 T  0042:3
                              BEGIN FOR I:=1 STEP 1 UNTIL MIXMAX DO                               22014400 T  0044:0
                                    IF *[JARROW[I]] NEQ 0 THEN                                    22014500 T  0048:0
                                    IF REPLY[I] LSS 0 THEN % WAITING FOR SOMETHING                22014600 T  0049:1
          $ SET OMIT = NOT(WORKSET)                                                               22014610 T  0050:3
                                IF (WKSETSTOPJOBS AND TWO(I))=0 THEN % NOT AUTO-ST                22014620 T  0050:3
          $ POP OMIT % WORKSET                                                                    22014630 T  0053:1
                                 REPLY[I]:=VWY;                                                   22014640 T  0053:1
                              END;                                                                22014900 T  0057:1
                                                                                                                22014400
                              FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                   22015000 T  0057:1
                                   BEGIN J ← J+3;%                                                22016000 T  0058:0
                                         IF JARROW[I] ≠ 0 THEN%                                   22017000 T  0059:1
                                              BEGIN A[J] ← JAR[I,3]+PROCTIME[I];                  22018000 T  0060:1
                                                    NT1 ← IOTIME[I]+JAR[I,4];%                    22019000 T  0063:2
                                                    WHILE NT1 < 0 DO NT1←NT1+CLOCK+P(RTR);        22020000 T  0065:3
                                                    A[J+1] ← NT1;%                                22021000 T  0068:0
```

```
                                A[J+2] ← JAR[I,7];%                                  22022000 T  007:0
                                IF PROCTIME[I]>0 THEN                                22023500 T  007:2
                                   TERMINATE(I&15[18:33:15]) ELSE                    22024000 T  007:2
                                IF A[J+1]> JAR[I,4] THEN                             22024500 T  007:1
                                   TERMINATE(I&83[18:33:15]);                        22025000 T  007:0
                           END%                                                      22026000 T  008:3
                                                                                                  22018000
                      ELSE A[J] ← A[J+1] ← A[J+2] ← 0;%                              22027000 T  008:3
                 END;%                                                               22028000 T  008:2
                                                                                                  22016000
                 DISKIO(J,A INX 0=1,3×MIXMAX+3,ESPDISKTOP+1);                        22029000 T  008:3
                 UNLOCKTOG(ABORTMASK);                                               22030000 T  009:0
                                                                                                  22030000
$ SET OMIT = NOT(DCLOG AND DATACOM )                                                 22030099 T  009:2
                 NOPROCESSTOG ← NOPROCESSTOG-1;%                                     22031000 T  009:2
                 FOR I ← 20 STEP 1 UNTIL 21 DO%                                      22032000 T  009:3
                      BEGIN IF NOT UNIT[I].[16:1] THEN%                              22033000 T  009:8:0
                                UNIT[I].[17:1] ← 0;%                                 22034000 T  009:1
                           STARTIO(I);%                                              22035000 T  010:1
                      END;%                                                          22036000 T  010:3:0
                                                                                                  22033000
$ SET OMIT = NOT(DFX)                                                                22036999 T  010:5:1
                 IF TERMINALCLOCK ≠ 0 THEN%                                          22039000 T  010:5:1
                 IF CLOCK-TERMINALCLOCK > 512 THEN%                                  22040000 T  010:6:0
                 BEGIN                                                               22040500 T  010:7:3
                 FOR I ← 0 STEP 2 UNTIL JOBNUM DO%                                   22041000 T  010:8:1
                 IF PRTROW[X:=BED[I].[3:5]].[PSF]=1 THEN                             22042000 T  010:9:0
                 IF JAR[X,9].SYSJOBF ≠ LIBMAINCODE THEN                              22042100 T  011:1:3
                      BEGIN BED[I] ← BED[JOBNUM];%                                   22043000 T  011:4:1
                           BED[I+1] ← BED[JOBNUM+1];%                                22044000 T  011:6:1
                           INDEPENDENTRUNNER(P(,RUN),X,0);                           22045000 T  011:8:3
                           I ← JOBNUM ← JOBNUM-2;%                                   22046000 T  012:0:0
                      END;%                                                          22048000 T  012:1:3
                                                                                                  22043000
                 TERMINALCLOCK:=0;                                                   22048200 T  012:4:0
                 END;                                                                22048400 T  012:4:3
                                                                                                  22040500
                 SLEEP([J],IOMASK);%                                                 22049000 T  012:4:3
                 FORGETSPACE(A);%                                                    22050000 T  012:6:1
$ SET OMIT = NOT(STATISTICS)                                                         22050909 T  012:7:1
$ SET OMIT = NOT(SHAREDISK)                                                          22050999 T  012:7:1
                 NSECONDREADY:=TRUE;                                                 22053700 T  012:7:1
                 SECONDCTR:=0;                                                       22053800 T  012:9:0
                 KILL([MSCW]);                                                       22053900 T  012:9:3
           END;%                                                                     22054000 T  013:0:2
                                                                                                  22002000
                                                                                    SIZE= 0131 WORDS
```

```
                    PROCEDURE STATUS;%                                                                  22055000 T  0000:0
                                                                                                  START OF REL SEGMENT: DISK ADDRESS = 00733
                        BEGIN REAL U=+1,%                                                               22056000 T  0000:0
STACK(F+1) = U
                              MSCW=-2,                                                                  22056500 T  0000:0
STACK(F-2) = MSCW
                              T=U+1,%                                                                   22057000 T  0000:0
STACK(F+2) = T
                              T1=T+1;%                                                                  22058000 T  0000:0
STACK(F+3) = T1
                         INTEGER%                                                                       22059000 T  0000:0
                              I=T1+1;%                                                                  22060000 T  0000:0
STACK(F+4) = I
                        ARRAY AREA=I+1[*];%                                                             22061000 T  0000:0
STACK(F+5) = AREA
                        REAL HDR = AREA+1,                                                              22061100 T  0000:0
STACK(F+6) = HDR
                             SEGO= HDR + 1,                                                             22061110 T  0000:0
STACK(F+7) = SEGO
                             F   = SEGO+1;                                                              22061120 T  0000:0
STACK(F+10) = F
                        ARRAY SHEAT = F+1[*];                                                           22061130 T  0000:0
STACK(F+11) = SHEAT
                        LABEL TRYAGAIN,LDCNTRL,DISK;                                                    22061200 T  0000:0
                        LABEL L,EL,NOTREADY,DIE,ACCEPT,SCRATCH,INPUT,TESTBACKUP,                        22062000 T  0000:0
                             COMMON;                                                                    22063000 T  0000:0
                        LABEL CARD,PRINTER,TAPE,DRUM,DISC,SPO,PUNCH,UNLD,                               22064000 T  0000:0
                             PAPERPUNCH,PAPER,DATACOM;                                                  22064500 T  0000:0
                        SWITCH S := CARD,PRINTER,TAPE,DRUM,DISC,SPO,PUNCH,UNLD,                         22065000 T  0000:0
                             PAPERPUNCH,PAPER,DATACOM;%                                                 22066000 T  0000:0
                             REAL RCW=+0;%                                                              22067000 T  0000:0
STACK(F+0) = RCW
                    SUBROUTINE SPACEA;%                                                                 22068000 T  0000:0
                        BEGIN AREA ← (SPACE(12) INX MEMORY)&10[8:38:10] END;%                           22069000 T  0001:0
                                                                                                                    22069000
                    SUBROUTINE AUTOLOADER;                                                              22069010 T  0005:0
                      BEGIN                                                                             22069020 T  0005:0
                TRYAGAIN:                                                                               22069025 T  0005:0
                      IF (HDR:=DIRECTORYSEARCH(P(LDCNTRL),P(DISK),3)) ≠ 0 THEN                          22069030 T  0005:0
                      BEGIN                                                                             22069040 T  0007:1
                      SHEAT := [MIF:=TYPEDSPACE(31,SHEETAREAV)]] & 30[8:38:10];%%167-                   22069050 P  0007:3
                      STREAM(S:=F-1, D:=F); % ZERO OUT THE SHEAT ENTRY                                   22069060 T  0012:0
                         BEGIN                                                                          22069070 T  0013:2
                         SI:=S; DS:=30 WDS;                                                             22069080 T  0013:2
                         END;                                                                           22069090 T  0014:0
                                                                                                                    22069070
                      SEGO := TYPEDSPACE(30,SEGZEROAREAV);%                                  %167-       22069100 P  0014:1
                      DISKWAIT(-SEGO, 30, M[HDR INX 10]);                                               22069110 T  0016:2
                      F.[FF] := HDR; % CORE ADDRESS OF HEADER IN [FF] OF PARAM.                         22069120 T  0019:1
                      SHEAT[7] := SEGO;  % CORE ADRS,OF SEGMENT ZERO IN SHEAT[7]                        22069130 T  0020:2
                      SHEAT[0] := P(LDCNTRL);                                                           22069140 T  0021:3
                      SHEAT[1] := P(DISK);                                                              22069150 T  0023:0
                      SHEAT[2] := 0 & 1[4:47:1] & LDCNTRLCODE[5:45:3] & 2[8:38:10];                     22069160 T  0024:1
                      % [4:1] IN SHEET[2] MEANS SUPRESS BOJ/EOJ MESSAGES                               22069170 T  0028:2
                      SHEAT[16] := SHEAT[17] := @377777777777; % TIME LIMITS                           22069180 T  0028:2
                      SHEAT[19] := U;              % COMMON VALUE                                       22069190 T  0030:3
                      SHEAT[20] := 4;              % CORE ESTIMATE                                      22069200 T  0032:0
```

```
SHEAT[21] := 150;            % STACK SIZE
SHEAT[24] := MCP;                                                    %131=

STREAM(A:=0 : S := P(.SCHEDULEIDS));
   BEGIN
   SI:=S;
   47(SKIP SB; SKIP DB; TALLY:=TALLY+1;
   IF SB THEN ELSE JUMP OUT);
   DS:=SET; A:=TALLY;
   END STREAM STATEMENT;


I := P;
SHEAT[3].[8:10] := I;        % SCHEDULE NUMBER
SHEAT[23] := (CLOCK + P(RTR)) DIV 60;
SHEAT[25] := HDR.[FF]; % DISK ADDRESS OF FILE HEADER
STREAM(U, I:=I:=SPACE(11));
   BEGIN
   DI:=DI+16;
   DS:=31LIT"CC EXECUTE LDCNTRL/DISK;COMMON=";
   SI:=LOC U; DS:=8DEC;
   DS:=6LIT";END.←";
   END STREAM STATEMENT;

M[1] := 0; M[I+1]:=10;
SHEAT[6] := GETESPDISK & 10[18:33:15];
DISKWAIT(I, 11, SHEAT[6].[CF]);
FORGETSPACE(I);
MULTITABLE[U] := "CONTROL";
LABELTABLE[U] := (="DECK    ");
RDCTABLE[U]   := 1 & 1[14:38:10];
IF U THEN READERA:=0 ELSE READERB:=0;
INDEPENDENTRUNNER(P(,SELECTRUN),F,160);
END ELSE % IF IN DIRECTORY

BEGIN
ENTERSYSFILE(2);
GO TRYAGAIN;
LDCNTRL::: "LDCNTRL";
   DISK::: "DISK    ";
END;

  END SUBROUTINE AUTOLOADER;

P(0,0,0,0,0,0,0,0,0,0);%
SPACEA;%
WHILE (T ← P(RRR) OR RRRMECH) ≠ READY DO%
     BEGIN I ← ORTINU[U ← (P(T FQV NOT READY,DUP,DUP,×,×)%
               ×@1000000000000),%
               [3:6]][5:11:7]/@100000000000;%
          IF T < READY THEN%
               BEGIN     COMMENT SOMETHING WENT NOT READY;%
                         READY ← READY AND NOT I;%
                    IF LABELTABLE[U] ≥ 0 THEN%
                      BEGIN%
     L:                  LABELTABLE[U] ← @114;%
                         IF (U AND @774) NEQ 16 THEN
```

```
22069210 T  0033:1
22069212 C  0034:2
22069220 T  0036:2
22069230 T  0036:2
22069240 T  0037:3
22069250 T  0037:3
22069260 T  0038:0
22069270 T  0039:0
22069280 T  0040:2
22069290 T  0041:0
                  22069240
22069300 T  0041:1
22069310 T  0041:1
22069320 T  0041:3
22069330 T  0044:1
22069340 T  0046:2
22069350 T  0048:1
22069360 T  0051:1
22069370 T  0051:1
22069380 T  0051:2
22069390 T  0055:3
22069400 T  0056:1
22069410 T  0057:1
                  22069360
22069420 T  0057:2
22069430 T  0061:0
22069440 T  0063:0
22069450 T  0065:0
22069460 T  0065:3
22069470 T  0067:0
22069480 T  0068:2
22069490 T  0070:3
22069500 T  0076:3
22069510 T  0078:0
                  22069040
22069520 T  0078:0
22069530 T  0078:2
22069540 T  0079:1
22069550 T  0079:3
22069560 T  0081:0
22069570 T  0082:0
                  22069520
22069600 T  0082:0
                  22069020
22071000 T  0082:1
22073000 T  0085:1
22074000 T  0086:0
22075000 T  0088:1
22076000 T  0090:2
22077000 T  0091:0
22078000 T  0094:0
22079000 T  0094:3
22080000 T  0095:1
22081000 T  0096:3
22082000 T  0097:3
22083000 T  0098:1
22084000 T  0099:2
```

```
                              MULTITABLE[U]:=0;                                  22084500 T  0100:3
                         END;%                                                   22085000 T  0102:2
                                                                                            22082000
FL:                 RRRMECH ← RRRMECH AND NOT I;%                               22086000 T  0102:2
               END OF NOT READY%                                                22087000 T  0104:0
                                                                                            22079000
          ELSE BEGIN     COMMENT SOMETHING WENT READY;%                         22088000 T  0104:0
                    READY ← READY OR I;%                                        22089000 T  0106:0
                    UNIT[U].[13:1] ← 0;%                                        22090000 T  0107:1
                    IF LABELTABLE[U] ≠ @114 THEN%                               22091000 T  0109:3
                         BEGIN RRRMECH ← RRRMECH OR I;%                         22092000 T  0110:3
                              IF LABELTABLE[U] = @214 THEN%                     22093000 T  0112:2
                                   BEGIN I ← I AND NOT SAVEWORD;%               22094000 T  0113:2
                                        GO TO L;%                               22095000 T  0115:2
                              END;%                                             22096000 T  0116:0
                                                                                            22094000
                              START IO(U);%                                     22097000 T  0116:0
                              GO TO COMMON;%                                    22098000 T  0116:3
                         END;%                                                  22099000 T  0117:1
                                                                                            22092000
                    IF (U AND @774) NEQ 16 THEN                                 22100000 T  0117:1
                         MULTITABLE[U]:=RDCTABLE[U]:=0;                         22100500 T  0118:2
                    IF (I AND SAVEWORD) ≠ 0 THEN%                               22101000 T  0121:1
                         BEGIN RRRMECH ← I AND SAVEWORD OR RRRMECH;             22102000 T  0122:2
                              GO TO COMMON;%                                    22103000 T  0124:3
                         END;%                                                  22104000 T  0125:1
                                                                                            22102000
                    GO S[UNIT[U].[1:4]];%                                       22105000 T  0125:1
TAPE: P(WAITIO(@4200000000,5,U),DEL);%                                          22106000 T  0132:2
          IF (T ← WAITIO(AREA INX @120540000000,@7500045,U)),%                  22107000 T  0134:0
               [45:3] ≠ 0 THEN%                                                 22108000 T  0136:2
NOTREADY: BEGIN READY ← READY AND NOT I;%                                       22109000 T  0137:2
                    GO TO L;%                                                   22110000 T  0139:2
               END;%                                                            22111000 T  0143:0
                                                                                            22109000
          IF MOD3IOS AND NOT T.[42:1] THEN  BEGIN                    %AI        22111500 T  0143:0
               DO UNTIL (T1←WAITIO(AREA INX @340000012,@75,U))≠0;               22112000 P  0145:2
               IF T1.[43:2]≠0 THEN T1←WAITIO(@4200000000,5,U); %697-            22112100 C  0149:0
          END ELSE T1←WAITIO(@4200000000,5,U);                       %AI        22112500 T  0152:2
                                                                                            22111500
               IF T1.[45:3]≠0 THEN GO TO NOTREADY;                   %AI        22113000 T  0156:3
          DO UNTIL NOT (T1←WAITIO(@500000000,@165,U)) OR                        22114000 T  0158:2
               (TRANSACTION[U]←0);%                                             22115000 T  0160:2
          IF T1.[42:1] THEN                                                     22115020 T  0162:2
          BEGIN; STREAM(T←T1NU[U],A←AREA);                                      22115030 T  0163:1
               BEGIN SI←LOC T; SI←SI+5; DS←LIT"#";                              22115040 T  0165:1
                    DS←3 CHR; DS←10 LIT "=BAD LOAD←";                           22115050 T  0166:1
               END;                                                             22115060 T  0168:0
                                                                                            22115040
          SPOUT(AREA INX 0); SPACEA; GO TO L;                                   22115070 T  0168:1
          END;                                                                  22115075 T  0174:0
                                                                                            22115030
          IF T1.[45:1] THEN GO TO NOTREADY;%                                    22116000 T  0174:0
          PRNTABLE[U]←0&(NOT T1)[1:43:1];%                                      22117000 T  0175:2
          IF T.[43:1] THEN%                                                     22118000 T  0178:0
               BEGIN;STREAM(T←T1NU[U],AREA);%                                   22119000 T  0178:3
                         BEGIN SI ← LOC T; SI ← SI+5;%                          22120000 T  0180:3
```

```
                    DS ← LIT "#"; DS ← 3 CHR;%                                  22121000 T  0181:1
                    DS ← 14 LIT " PARITY, RW/L←"%                               22122000 T  0182:0
               END;%                                                            22123000 T  0184:0
                                                                                           22120000
DIE:           SPOUT(AREA INX 0); SPACEA;                                       22124000 T  0184:1
               LABELTABLE[U] ← @314;%                                           22125000 T  0187:0
               GO TO EL;%                                                       22126000 T  0188:1
          END;%                                                                 22127000 T  0188:3
                                                                                           22119000
     IF T.[42:1] THEN%                                                          22128000 T  0188:3
          BEGIN;STREAM(T←TINU[U],AREA);%                                        22129000 T  0189:2
               BEGIN SI ← LOC T; SI ← SI+5;%                                    22130000 T  0191:2
                    DS ← LIT "#"; DS ← 3 CHR;%                                  22131000 T  0192:0
                    DS ← 15 LIT " TAPE MK, RW/L←";%                             22132000 T  0192:3
               END;%                                                            22133000 T  0195:0
                                                                                           22130000
               GO TO DIE;%                                                      22134000 T  0195:1
          END;%                                                                 22135000 T  0195:3
                                                                                           22129000
     STREAM(Y←0;AREA,X←[T]);%                                                   22136000 T  0195:3
          BEGIN DS ← 8 LIT " LABEL  ";%                                         22137000 T  0197:2
               SI ← AREA; DI ← DI-8;%                                           22138000 T  0198:3
               IF 8 SC = DC THEN TALLY ← 1;%                                    22139000 T  0199:1
               AREA ← TALLY;%                                                   22140000 T  0200:0
               SI ← SI+45; DI ← LOC Y; DS ← 5 OCT;%                             22141000 T  0200:1
               SI ← LOC AREA; DI ← X; DS ← WDS;%                                22142000 T  0201:0
          END;%                                                                 22143000 T  0201:3
                                                                                           22137000
     NT1 ← P;%                                                                  22144000 T  0202:0
     IF T THEN PRNTABLE[U],[30:18]:=NT1 ELSE                                    22145000 T  0202:2
         BEGIN STREAM(Y:=0;AREA,X:=[T]);                                        22145050 T  0205:3
               BEGIN DS:=4 LIT "VOL1";                                          22145100 T  0208:0
                    SI:=AREA; DI:=DI-4;                                         22145150 T  0208:3
                    IF 4 SC=DC THEN TALLY:=1;                                   22145200 T  0209:1
                    AREA:=TALLY; SI:=SI+1;                                      22145250 T  0210:0
                    DI:=LOC Y; DS:=5 OCT;                                       22145300 T  0210:2
                    SI:=LOC AREA; DI:=X; DS:=WDS;                               22145350 T  0211:0
               END;                                                             22145400 T  0211:3
                                                                                           22145100
          NT1:=P;                                                               22145450 T  0212:0
          IF T THEN BEGIN                                                       22145500 T  0212:2
                    PRNTABLE[U]:=(*P(DUP))&NT1[30:30:18] OR M;                  22145525 T  0213:1
                    USASITAPE([AREA],[CF],T,1,U,1);                             22145550 T  0215:1
                    END;                                                        22145600 T  0218:3
                                                                                           22145500
         END;                                                                   22145650 T  0218:3
                                                                                           22145050
     IF NOT T1.[43:1] THEN%                                                     22146000 T  0218:3
          BEGIN IF T THEN%                                                      22147000 T  0219:3
                    BEGIN                                                       22148000 T  0220:2
                         IF P(AREA[1],DUP)="PBTMCP " OR                         22156000 T  0221:0
                         P(XCH)="PUTMCP " THEN GO INPUT;                        22156100 T  0222:1
                         IF AREA[4].[12:30] > DATE THEN%                        22157000 T  0224:0
                         BEGIN IF RETMSG THEN                                   22158000 T  0225:2
                              STREAM(T←TINU[U],A←[AREA[6]]);                    22159000 T  0226:3
                              BEGIN SI←LOC T;SI←SI+5;DS←3 CHR;                  22160000 T  0228:3
                                   DS←5 LIT " RET ";                            22161000 T  0229:2
```

```
                                END ELSE GO TO INPUT;                                  22162000 T  0230:2
                                                                                                   22160000
ACCEPT:                         T1 ← SPACE(4);%                                        22163000 T  0230:3
                                STREAM(A←[AREA[1]],T1);%                               22164000 T  0233:0
                                     BEGIN SI ← A; SI ← SI+40;%                        22165000 T  0234:1
                                          DS ← LIT "#";%                               22166000 T  0234:3
                                          DS ← 8 CHR; SI ← A;%                         22167000 T  0235:1
                                          2(DS ← LIT " ";%                             22168000 T  0235:3
                                          SI ← SI+1; DS ← 7 CHR);                      22169000 T  0236:2
                                          DS ← LIT "←";%                               22170000 T  0237:1
                                     END;%                                             22171000 T  0237:3
                                                                                                   22165000
                                SPOUT(T1);%                                            22172000 T  0238:0
                                GO TO INPUT;%                                          22173000 T  0239:1
                           END ELSE%                                                   22174000 T  0242:0
                                                                                                   22158000
SCRATCH:                        LABELTABLE[U] ← 0;%                                    22175000 T  0242:0
                      END ELSE GO TO UNLD;                                             22176000 T  0243:3
                                                                                                   22148000
               END%                                                                    22177000 T  0243:3
                                                                                                   22147000
          ELSE IF T THEN BEGIN%                                                        22178000 T  0243:3
INPUT:    LABELTABLE[U] ← AREA[2];%                                                    22179000 T  0245:0
          MULTITABLE[U] ← AREA[1];%                                                    22180000 T  0246:2
          STREAM(A←[AREA[3]],B←[T]);%                                                  22181000 T  0248:0
               BEGIN SI ← A; DS ← 3 OCT;%                                              22182000 T  0249:1
                    DS ← 5 OCT; DS ← 2 OCT%                                            22183000 T  0249:3
               END;%                                                                   22184000 T  0250:1
                                                                                                   22182000
          RDCTABLE[U] ← I&T1[24:31:17]&T[14:38:10];%                                   22185000 T  0250:2
          IF (MULTITABLE[U]="PBTMCP " OR                                               22188000 T  0253:3
              MULTITABLE[U]="PUTMCP ") AND                                             22188100 T  0254:3
               LABELTABLE[U] = "BACK-UP" THEN%                                         22189000 T  0256:0
               BEGIN LABELTABLE[U] ← @322212342546447;%                                22190000 T  0257:1
               STREAM(A←TINU[U],PN←MULTITABLE[U]="PUTMCP ",                            22191000 T  0259:0
                     AREA);                                                            22191100 T  0260:3
                        BEGIN SI ← LOC A; SI ← SI+5;%                                  22192000 T  0261:2
                             PN(DS←3 LIT"#CP"; JUMP OUT TO L);                         22192100 T  0262:0
                             DS←3 LIT"#LP"; L:                                         22192200 T  0264:0
                             DS←12 LIT" BACK-UP ON ";                                  22193000 T  0264:3
                             DS ← 3 CHR; DS ← LIT "←";%                                22194000 T  0266:2
                        END;%                                                          22195000 T  0267:1
                                                                                                   22192000
                SPOUT(AREA INX 0); SPACEA;                                             22196000 T  0267:2
               END;%                                                                   22197000 T  0271:0
                                                                                                   22190000
          END ELSE%                                                                    22198000 T  0271:0
                                                                                                   22178000
PAPER:%
UNLD:          LABELTABLE[U] ← @314;%                                                  22200000 T  0276:0
     GO TO COMMON;%                                                                    22201000 T  0277:1
PRINTER:%
     T ← WAITIO(@6000000000,4,U),[45:1];%                                            22203000 T  0277:3
     UNIT[U],[16:2] ← 0;%                                                            22204000 T  0280:0
     IF T THEN GO TO NOTREADY;%                                                      22205000 T  0282:2
TESTBACKUP:                                                                          22205500 T  0283:2
     IF AUTOPRINT THEN                                                               22206000 T  0283:2
```

```
                IF PRINTORPUNCHWAIT(-U,0) THEN GO TO COMMON;                                    22207000 T  0284:1
            GO TO SCRATCH;                                                                     22208000 T  0286:3
        CARD:%                                                                                 22209000 T  0289:0
            RRRMECH:=RRRMECH OR I;                                                             22209200 T  0289:0
            IF CDONLY THEN                                                                     22209400 T  0290:1
              BEGIN                                                                            22209500 T  0291:0
              AUTOLOADER;                                                                      22209600 T  0291:2
              GO TO COMMON;                                                                    22209700 T  0293:0
              END;                                                                             22209800 T  0293:2
                                                                                                           22209500
            LABELTABLE[U]:=-@14;                                                               22212200 T  0293:2
            INDEPENDENTRUNNER(P(.CONTROLCARD),0&U[3:43:5],192);                                22212400 T  0295:0
            IF U≥32 AND U≤63 THEN PSEUDOCOPY←PSEUDOCOPY+1;%          %541-                     22212450 C  0297:1
            GO TO COMMON;%                                                                     22213000 T  0300:3
        PUNCH:                                                                                 22213500 T  0301:1
            STARTIO(U);                                                                        22213600 T  0301:1
            IF UNIT[U].[15:3]=0 THEN GO TESTBACKUP ELSE GO TO SCRATCH;                         22213700 T  0302:0
        DRUM:%                                                                                 22214000 T  0304:2
        DISC:                                                                                  22215000 T  0304:2
        SPO:%                                                                                  22216000 T  0304:2
        PAPERPUNCH:%                                                                           22218000 T  0304:2
        DATACOM:%                                                                              22219000 T  0304:2
            STARTIO(U);%                                                                       22220000 T  0304:2
            GO TO SCRATCH;%                                                                    22221000 T  0305:1
        COMMON:   END OF READY;%                                                               22222000 T  0305:3
                                                                                                           22088000
        END;%                                                                                  22223000 T  0305:3
                                                                                                           22075000
    STATUSBIT ← TRUE;%                                                                         22224000 T  0306:1
    FORGETSPACE(AREA,[33:15]);%                                                                22225000 T  0308:0
    KILL([MSCW]);                                                                              22226000 T  0309:2
    END STATUS;%                                                                               22227000 T  0311:1
                                                                                                           22056000
                                                                                          SIZE= 0311 WORDS
```

```
                    BOOLEAN PROCEDURE OLAY(LOC);    % MADE SAVE IN INITIALIZE                22228000 T  0001:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00744
                        VALUE LOC;  REAL LOC;%                                    22229000 T  0001:0
                        BEGIN REAL LINK, MOM, FRONT, BACK, CHAR, BS, STACK, S, SB,%          22230000 T  0001:0
STACK(F+2) = LINK
STACK(F+3) = MOM
STACK(F+4) = FRONT
STACK(F+5) = BACK
STACK(F+6) = CHAR
STACK(F+7) = BS
STACK(F+10) = STACK
STACK(F+11) = S
STACK(F+12) = SB
                                T, X, DESC, DISK, IOD, MIX, JOBKILLED, MIXUP, SEGNO;%       22231000 T  0001:0
STACK(F+13) = T
STACK(F+14) = X
STACK(F+15) = DESC
STACK(F+16) = DISK
STACK(F+17) = IOD
STACK(F+20) = MIX
STACK(F+21) = JOBKILLED
STACK(F+22) = MIXUP
STACK(F+23) = SEGNO
                                ARRAY NAME SEGDICT;%                                     22232000 T  0001:0
STACK(F+24) = SEGDICT
                                REAL RESULT=+1;%                                         22233000 T  0001:0
STACK(F+1) = RESULT
                                ARRAY SPRT[*];                                           22234000 T  0001:0
STACK(F+25) = SPRT
                                REAL CORE, CUED;  REAL INITCW=MIXUP;                     22235000 T  0001:0
STACK(F+26) = CORE
STACK(F+27) = CUED
STACK(F+22) = INITCW
                                REAL TYPE13, RSLT, NOAUX;                                22235500 T  0001:0
STACK(F+30) = TYPE13
STACK(F+31) = RSLT
STACK(F+32) = NOAUX
                            $ SET OMIT = NOT(NEWLOGGING)                                 22235599 T  0001:0
                            $ SET OMIT = NOT(WORKSET)                                    22235610 T  0001:0
                                REAL MCPTEMP;                                            22235620 T  0001:0
STACK(F+33) = MCPTEMP
                            $ POP OMIT % WORKSET                                         22235621 T  0001:0
                                LABEL EXIT; % ALL AVENUES MUST LEAD TO HERE              22235700 T  0001:0
                                LABEL AROUND, CODE, BACKAGAIN, MCP, INTRINSIC;%          22236000 T  0001:0
                                LABEL RETRY, AGAIN, FOG;                                 22236100 T  0001:0
                                DEFINE TSKA = SPRT#;                                     22236150 T  0001:0
                                BOOLEAN SUBROUTINE AWAKEN;%                              22237000 T  0001:0
                                BEGIN COMMENT AWAKEN CHECKS TO SEE IF WE HAVE HALTED     22238000 T  0001:0
                                     THE JOB ON PROCESSOR 2.  IF SO, IT RESTARTS THE     22239000 T  0001:0
                                     TIMING FOR HIM, AND CALLS "HALT" TO CHECK INTERRUPTS;%  22240000 T  0001:0
                                     IF JOBKILLED THEN%                                  22241000 T  0001:0
                                     BEGIN                                               22242000 T  0001:1
                            $ SET OMIT = NEWLOGGING                                      22242099 T  0001:3
                                          STARTLOG(P2MIX);                               22242100 T  0001:3
                            $ POP OMIT                                                   22242101 T  0004:1
                                          JOBKILLED ← FALSE;  OLAY ← RESULT OR 2;%       22243000 T  0004:1
                                          HALT;  NOPROCESSTOG ← NOPROCESSTOG-1;%         22244000 T  0006:1
```

```
          END;%                                                                    22245000 T  0008:0
                                                                                              22242000
     AWAKEN ← RESULT END;%                                                         22246000 T  0008:0
                                                                                              22238000
     SUBROUTINE STOP;%                                                             22247000 T  0008:3
     BEGIN COMMENT STOP HALTS THE JOB ON PROCESSOR 2, AND                          22248000 T  0009:0
          CLOCKS HIM OFF.  IT SETS JOBKILLED SO THAT AWAKEN                        22249000 T  0009:0
          CAN DO ITS DIRTY WORK BEFORE RETURNING;%                                 22250000 T  0009:0
          JOBKILLED ← TRUE;  P(HP2);%                                              22251000 T  0009:0
          STOPLOG(P2MIX,0);                                                        22252000 T  0010:0
     END STOPPER;%                                                                 22253000 T  0012:2
                                                                                              22248000
     SUBROUTINE CODEOVERLAY;%                                                      22254000 T  0012:3
     BEGIN COMMENT CODEOVERLAY HANDLES ALL CASES OF MARKING                        22255000 T  0013:0
          A NORMAL-STATE SEGMENT AS NOT-PRESENT.  IT DOES THIS                     22256000 T  0013:0
          A SINGLE PRT AND STACK AT A TIME, AND IS ONLY CALLED                     22257000 T  0013:0
          REPEATEDLY FOR RE-ENTRANT CODE OR INTRINSICS;%                           22258000 T  0013:0
          IF CHAR THEN S ← M[SB ← M[S].[FF]].[FF] ELSE S ← S-1;%                   22259000 T  0013:0
          SPRT ← PRT[MIX,10];%                                                     22260000 T  0019:1
          IF SPRT[X].[2:1] THEN BEGIN%                                             22261000 T  0020:3
% NEED TO DO PRT AND STACK SEARCH ONLY IF PRESENT IN THIS PRT                      22262000 T  0022:1
               DO UNTIL (X ← (SPRT[X] ← (*P(DUP))&0[2:2:1]%                        22263000 T  0022:1
                         &(SPRT[X].[CF]-FRONT)[CTC]).[6:12])≥2048;%                22264000 T  0023:2
AROUND:%                                                                           22265000 T  0028:2
               WHILE (STACK := HUNT(BS).[CF]) LSS S DO                             22266000 T  0028:2
               BEGIN CORE ← (DESC ← NFLAG(M[STACK])).[CF];%                        22267000 T  0031:0
                    IF CORE ≥ FRONT AND CORE < BACK THEN                           22268000 T  0033:3
                    IF DESC LSS 0 THEN%PROG. DESC OR RCW.                          22269000 T  0035:2
                    IF DESC.[3:1] THEN%DESC                                        22270000 T  0036:3
                    IF DESC.[2:1] THEN%PRESENT                                     22270050 T  0038:0
                  IF DESC.[6:2]=1 THEN %TYPE 13 INTRINSIC DESC                     22270100 T  0039:1
                     M[STACK]:=FLAG(DESC & 0[2:2:1]                                22270200 T  0041:0
                                  & (MOM.[8:10])[CTC]) ELSE                        22270300 T  0042:3
% DESCRIPTOR -- INSERT OFFSET AND RESET P-BIT                                      22271000 T  0045:1
                       M[STACK] ← FLAG(DESC&0[2:2:1]%                              22272000 T  0045:1
                                       &(CORE-FRONT)[CTC])%                        22273000 T  0048:1
                    ELSE                                                           22273100 T  0050:0
                    ELSE BEGIN%                                                    22274000 T  0050:3
% CONTROL WORD (RCW) -- UNFLAG IN STACK, PUT OFFSET INTO                           22275000 T  0051:3
%    CORRESPONDING MSCW, AND MOM INTO RCW,[CF]                                     22276000 T  0051:3
                         M[X ← DESC.[FF]] ←%                                       22277000 T  0051:3
                              (*P(DUP))&(CORE-FRONT)[CTC];%                        22278000 T  0053:2
                         M[STACK] ← DESC&SEGNO[CTC];%                              22279000 T  0055:2
                    END;%                                                          22280000 T  0057:2
                                                                                              22274000
                    BS ← STACK+1;%                                                 22281000 T  0057:2
               END;%                                                               22282000 T  0058:3
                                                                                              22267000
               IF CHAR AND (STACK<SB) THEN%                                        22283000 T  0059:1
               BEGIN BS ← SB;  S ← HUNT(BS+1).[CF];  GO AROUND END;                22284000 T  0060:2
                                                                                              22284000
               IF P(SPRT[19].TOP) THEN P(DEL) ELSE                      %DS       22284100 T  0064:1
               BEGIN CORE:=POLISH.[CF];                                 %DS       22284200 T  0065:3
                    IF CORE < FRONT OR CORE ≥ BACK THEN                            22284300 T  0067:1
                     ELSE SPRT[19]:=(*P(DUP))&0[2:2:1]                  %DS       22284400 T  0069:0
                                    &(CORE-FRONT)[CTC];                 %DS       22284500 T  0071:1
               END;                                                     %DS       22284600 T  0073:2
```

```
                                                                                                                    22284200
$ SET OMIT = NOT(STATISTICS)
             END OF PRESENT IN PRT CASE;%                                                                 22284699 T  0073:2
                                                                                                          22285000 T  0073:2
                                                                                                                    22261000
        END OF CODEOVERLAY;%                                                                              22286000 T  0073:2
                                                                                                                    22255000
    SUBROUTINE INT13;   %STACK SEARCH FOR TYPE 13 INTRINSIC CALLS                                         22286010 T  0073:3
        BEGIN CHAR:=P(PRT[MIX,8],DUP).[32:1];                                                             22286020 T  0074:0
              S:=P INX 0; BS:=PRT[MIX,10],[FF];                                                           22286030 T  0076:1
        IF CHAR THEN S:=M[SB:=M[S].[FF]].[FF] ELSE S:=S-1;                                                22286040 T  0079:1
    AGAIN:    WHILE (STACK := HUNT(BS),.[CF]) LSS S DO                                                    22286050 T  0085:2
                  BEGIN CORE:=(DESC:=NFLAG(M[STACK])),[CF];%                                              22286060 T  0088:0
                  IF CORE GEQ FRONT AND CORE LSS BACK THEN%                                               22286070 T  0090:3
                      IF DESC.[1:2] NEQ 0 THEN                                                            22286075 T  0092:2
                      IF DESC.[1:3]=7 THEN%                                                               22286080 T  0094:1
                       M[STACK]:=FLAG(DESC&0[2:2:1]&(MOM.[8:10])[CTC])                                    22286090 T  0096:0
                      ELSE                                                                                22286100 T  0099:1
                      BEGIN M[DESC.[FF]]:=(*P(DUP))&(CORE-FRONT)[CTC];                                    22286110 T  0100:1
                            M[STACK]:=DESC&(MOM.[8:10])[CTC]&                                             22286120 T  0103:1
                                      1[33:47:1];                                                         22286130 T  0106:0
                      END;                                                                                22286140 T  0107:2
                                                                                                                    22286110
                  BS:=STACK+1;                                                                            22286150 T  0107:2
                  END;                                                                                    22286160 T  0108:3
                                                                                                                    22286060
              IF CHAR AND (STACK LSS SB) THEN%                                                            22286170 T  0109:1
              BEGIN BS:=SB; S:=HUNT(BS+1),[CF]; GO AGAIN; END;                                            22286180 T  0110:2
                                                                                                                    22286180
    END OF TYPE 13 INTRINSIC STACK SEARCH;                                                                22286190 T  0114:1
                                                                                                                    22286020
         COMMENT   OLAY HANDLES OVERLAYS.  THERE ARE 3 CLASSES                                            22287000 T  0114:2
              OF THINGS WHICH MAY BE OVERLAID:                                                            22288000 T  0114:2
              1)   OBJECT PROGRAM DATA SEGMENTS                                                           22289000 T  0114:2
              2)   OBJECT PROGRAM CODE SEGMENTS                                                           22290000 T  0114:2
         AND  3)   MCP (NON-SAVE) PROCEDURES.                                                             22291000 T  0114:2
              4) MCP TABLES - OVERLAYABLE                                                                 22291500 T  0114:2
              EACH OF THESE CLASSES GETS SPECIAL HANDLING.                                                22292000 T  0114:2
              WHICH WILL BE DESCRIBED AS WE COME TO IT;                                                   22293000 T  0114:2
    % THIS CODE IS COMMON TO ALL CLASSES AND ALL CASES                                                     22294000 T  0114:2
$ SET OMIT = NOT(NEWLOGGING)                                                                              22294099 T  0114:2
$ SET OMIT = NOT(WORKSET)                                                                                 22294110 T  0114:2
         MCPTEMP := CLOCK + P(RTR);                                                                       22294120 T  0114:2
$ POP OMIT % WORKSET                                                                                      22294121 T  0123:0
         LINK ← M[LOC];  MOM ← M[LOC+1];%                                                                 22295000 T  0123:0
         FRONT := LOC + 2; BACK := LINK.[CF];                                                             22296000 T  0126:2
         IF (MIX ← LINK.[AREAMIXF])=0 THEN GO TO MCP;%                                    %167-           22297000 P  0129:0
    % <MIX>=0 AND NON-SAVE MEANS MCP PROCEDURE OR INTRINSIC                                               22298000 T  0131:1
         IF MIX=P2MIX THEN STOP;%                                                                         22299000 T  0131:1
         CHAR ← (INITCW ← PRT[MIX,8]).[32:1];%                                                            22300000 T  0134:0
         S ← INITCW.[CF];  BS ← PRT[MIX,10],[FF];%                                                        22301000 T  0136:2
    % CHAR IS CWMF,  S IS TOP-OF-STACK,  BS IS BASE OF STACK                                              22302000 T  0139:3
         IF LINK.[AREATYPEF]=CODEAREAV THEN GO TO CODE;%                                  %167-           22303000 P  0139:3
         IF TERMGOING(MIX) THEN GO TO FOG;                                                %507-           22303200 C  0141:2
    % TYPE=1 MEANS PROGRAM -- ONLY ALTERNATIVE IS DATA                                                    22304000 T  0143:2
         IF CHAR THEN%                                                                                    22305000 T  0143:2
    % SPECIAL CHECKS FOR ADDRESS SAVED IN CHARACTER MODE                                                  22306000 T  0143:3
         BEGIN CHAR:=(((T:=M[S-1],[CF]) ≥ FRONT AND T < BACK) OR                                          22307000 T  0143:3
```

```
                % M-REGISTER FROM ICW (SOURCE ADDRESS)                                  22308000 T  0148:1
                        ((T:=M[S-2].[FF])≥ FRONT AND T < BACK));                        22309000 T  0148:1
                % S-REGISTER FROM ILCW (DESTINATION ADDRESS)                            22310000 T  0153:0
                        IF NOT CHAR THEN%                                               22311000 T  0153:0
                        BEGIN X ← M[S ← M[S].[FF]].[FF]+1;%                             22312000 T  0153:2
                % M[S].[FF] IS ADDRESS OF RCW,  M[RCW].[FF] IS ADDRESS OF MSCW          22313000 T  0158:1
                        DO CHAR ← ((T ← M[S ← S-1].[CF])≥FRONT                          22314000 T  0158:1
                            AND T < BACK) UNTIL (S ≤ X) OR CHAR;                        22315000 T  0161:1
                % SEARCH THROUGH STREAM LOCALS AND PARAMETERS FOR ADDRESSES            22316000 T  0165:0
                        S ← X;%                                                         22317000 T  0165:0
                        END;%                                                           22318000 T  0165:3
                                                                                                    22312000
                    END;%                                                               22319000 T  0165:3
                                                                                                    22307000
                    IF CHAR THEN          %TELL BREAKOUT ABOUT IT                       22320000 T  0165:3
                    BEGIN P(AWAKEN,SSN); GO EXIT;                                       22320100 T  0166:0
                    END;                                                                22320200 T  0168:3
                                                                                                    22320100
                % CANNOT OVERLAY IF MAY BE ADDRESSES IN CHAR MODE STACK                 22321000 T  0168:3
                     IOD←M[MOM].[8:10];                                                 22322000 T  0168:3
                     IF (DISK:=MOM.[FF]) NEQ 0 THEN % OLAY ADDRESS PRESENT              22323000 T  0170:3
                        BEGIN                                                           22323200 T  0172:2
$ SET OMIT = NOT(AUXMEM)                                                                22323400 T  0173:0
                        MOM.[FF]:=0;                                                    22324800 T  0173:0
                        END;                                                            22325000 T  0174:1
                                                                                                    22323200
                     IF DISK=0 THEN DISK:=DISKSPACE(IOD,MIX,NOAUX);                     22325200 T  0174:1
                     IF DISK LSS 0 THEN       % NO OLAY DISK                            22325400 T  0177:1
                     BEGIN P(AWAKEN); GO EXIT;                                          22325410 T  0178:0
                     END;                                                               22325430 T  0180:2
                                                                                                    22325410
$ SET OMIT = NOT(STATISTICS)                                                            22325600 T  0180:2
                     IF (S:=S-1) GTR MOM THEN IF MOM GTR BS THEN BS:=MOM+1;             22326400 T  0180:2
                % IF MOTHER IS IN STACK, ONLY SEARCH ABOVE IT                          22326600 T  0185:1
                     WHILE (STACK:=HUNT(BS).[CF]) LSS S DO                              22326800 T  0185:1
                        BEGIN                                                           22327000 T  0187:3
                        IF (DESC:=NFLAG(M[STACK])).[1:2]=1 THEN                         22327200 T  0187:3
                % ONLY WORRY ABOUT DATA DESCRIPTORS WHICH ARE PRESENT                  22327400 T  0190:2
                            IF DESC.[FF]=MOM THEN                                       22327600 T  0190:2
                % THIS ONE DEMANDS ACTION -- IT POINTS INTO OUR ARRAY                  22327800 T  0192:1
                              IF DESC.[8:10]=0 THEN                                     22328000 T  0192:1
                % NAME DESCRIPTOR -- PUT IN OFFSET AND RESET P-BIT                     22328200 T  0194:0
                               M[STACK]:=FLAG((DESC.[CF]-FRONT)&MOM[CTF])               22328400 T  0194:0
                              ELSE                                                      22328600 T  0196:3
                % NORMAL ROW DESCRIPTOR -- ZERO CORE FIELD AND RESET P-BIT             22328800 T  0197:3
                               M[STACK]:=FLAG(0&DESC[8:8:25]);                          22329000 T  0197:3
                            BS:=STACK+1;                                                22329200 T  0201:0
                        END;                                                            22329400 T  0202:1
                                                                                                    22327000
                     IF M[MOM].[3:3] NEQ 7 % NOT READ ONLY ALREADY WRITTEN              22329600 T  0202:3
$ SET OMIT = NOT(BREAKOUT)                                                              22329800 T  0204:2
                     THEN                                                               22330400 T  0204:2
                        BEGIN                                                           22330600 T  0204:3
$ SET OMIT = NOT(AUXMEM)                                                                22330800 T  0205:1
RETRY:                  DISK:=IO(RSLT,FRONT-1,IOD&1[3:47:1],DATADDRESS(MIX,DISK));      22331400 T  0205:1
                        % [3:1] IN SIZE MARKS I/O AS ORIGINATING FROM OLAY             22331600 T  0209:1
                        M[MOM]:=(*P(DUP))&0[2:47:1]&5[CTC];                             22331800 T  0209:1
```

```
                P(AWAKEN,DEL);                                                  22332000 T  0212:2
                % CF=5 IN MOTHER IS INTERLOCK FOR MAKEPRESENT                    22332200 T  0214:1
                SNOOZE(0,[RSLT],IOMASK);                                        22332400 T  0214:1
                IF RSLT.[26:7] NEQ 0 THEN % I/O ERROR                           22332600 T  0215:2
                   BEGIN                                                        22332800 T  0216:3
$ SET OMIT = NOT(AUXMEM)                                                        22333000 T  0217:1
                   IF (DISK:=DISKSPACE(IOD,MIX,=0)) LSS 0 THEN                  22333800 T  0217:1
                      BEGIN % NO OLAY DISK                                      22334000 T  0219:3
                      M[MOM]:=(*P(DUP))&6[CTC];        % TERMINATE MARKER       22334200 T  0220:1
                      GO TO FOG;                                                22334400 T  0222:2
                      END;                                                      22334600 T  0223:0
                                                                                                 22334000
                   GO TO RETRY; % TRY AGAIN WITH ANOTHER ADDRESS                22334800 T  0223:0
                   END; % IF I/O ERROR                                          22335000 T  0223:2
                                                                                                 22332800
                M[MOM]:=(*P(DUP))&DISK[CTC]; % PUT DISK ADDRESS IN MOTHER       22335200 T  0223:2
                END % IF READ ONLY, NOT YET WRITTEN                             22335400 T  0225:3
                                                                                                 22330600
             ELSE                                                               22335600 T  0225:3
                BEGIN                                                           22335800 T  0225:3
                M[MOM]:=(*P(DUP))&0[2:47:1]&DISK[CTC];                          22336000 T  0226:1
                P(AWAKEN,DEL);                                                  22336200 T  0229:2
                END;                                                            22336400 T  0231:1
                                                                                                 22335800
          IF M[MOM].[3:3]=6 THEN M[MOM].[5:1]←1;                                22349100 T  0231:1
FOG:      FORGETSPACE(FRONT);                                                   22350000 T  0236:2
          P(TRUE); GO EXIT;                                                     22351000 T  0237:1
     CODE:%                                                                     22352000 T  0238:0
     % OBJECT PROGRAM CODE TO BE OVERLAID                                       22353000 T  0238:0
          IF (T ← M[S].[CF])≥FRONT AND T≤BACK THEN%                             22354000 T  0238:0
% CANNOT OVERLAY NORMAL STATE SEGMENT HE WILL RETURN TO                         22355000 T  0241:2
     BEGIN P(AWAKEN); GO EXIT;                                                  22356000 T  0241:2
     END;                                                                       22356020 T  0243:2
                                                                                                 22356000
     IF SOFTI>0 THEN                                                            22356100 T  0243:2
     IF JAR[MIX,2].[5:1] THEN       % SOFTWARE INTERRUPTS                       22356140 T  0244:1
       IF (TSKA ← PRT[MIX,TSX]).PBIT THEN                                       22356150 T  0246:1
          IF (T ← TSKA[8].[FF])≠0 THEN                                          22356200 T  0248:3
               IF (T←M[T].[CF])≥FRONT AND T≤BACK THEN                           22356300 T  0251:1
               BEGIN P(AWAKEN); GO EXIT;                                        22356400 T  0255:1
               END;                                                             22356420 T  0257:2
                                                                                                 22356400
     IF (MIXUP ← (SEGDICT ← PRT[MIX,4]).[FF])≠0 THEN%                           22357000 T  0257:2
% RE-ENTRANT CODE TO BE OVERLAID -- CHECK OTHER USERS, TOO                      22358000 T  0260:3
     BEGIN MIXUP ← MIXUP.[39:6];%                                               22359000 T  0260:3
          DO BEGIN%                                                             22360000 T  0262:2
               IF MIXUP=P2MIX THEN STOP;%                                       22361000 T  0262:2
% STOP OTHER USER OF THIS CODE IF RUNNING ON PROCESSOR 2                        22362000 T  0265:0
               IF (T ← M[PRT[MIXUP,8]].[CF])≥FRONT AND T≤BACK%                  22363000 T  0265:0
               THEN BEGIN P(AWAKEN); GO EXIT;                                   22364000 T  0268:2
                    END;                                                        22364100 T  0271:2
                                                                                                 22364000
% SAME CRITERIA APPLY TO ALL USERS OF THIS CODE                                 22365000 T  0271:2
               IF SOFTI>0 THEN                                                  22365100 T  0271:2
               IF JAR[MIXUP,2].[5:1] THEN    % SOFTWARE INTERRUPTS             22365140 T  0272:1
                 IF (TSKA ← PRT[MIXUP,@26]).PBIT THEN                           22365150 T  0274:1
                    IF (T ← TSKA[8].[FF])≠0 THEN                                22365200 T  0276:3
                         IF (T←M[T].[CF])≥FRONT AND T≤BACK THEN                 22365300 T  0279:1
```

```
                        BEGIN P(AWAKEN); GO EXIT;                                   22365400 T  0283:1
                        END;                                                        22365420 T  0285:2
                                                                                                22365400
          END UNTIL (MIXUP ← PRT[MIXUP,4].[24:6])=@77;%                             22366000 T  0285:2
                                                                                                22360000
   % CHECK ALL USERS ON MIX-INDEX LINKED LIST                                       22367000 T  0288:2
       END;%                                                                        22368000 T  0288:2
                                                                                                22359000
   % IF WE REACH THIS POINT, WE CAN AND WILL OVERLAY THE AREA                       22369000 T  0288:2
$ SET OMIT = NOT(AUXMEM)                                                            22369999 T  0288:2
   BACKAGAIN::                                                                      22371200 T  0288:2
$ SET OMIT = AUXMEM                                                                 22371210 T  0288:2
   X←SEGDICT[SEGNO←MOM].[8:10];CODEOVERLAY;                                         22371220 T  0288:2
$ POP OMIT                                                                          22371221 T  0293:0
$ SET OMIT = NOT(AUXMEM)                                                            22371299 T  0293:0
       IF MIXUP THEN%                                                               22372000 T  0293:0
   % RE-ENTRANT CODE BEING OVERLAID -- MUST FIX ALL STACKS AND PRTS                 22373000 T  0293:1
       IF (MIX ← PRT[MIX,4].[24:6])≠@77 THEN%                                       22374000 T  0293:1
   % SET UP CHAR, S, AND BS FOR NEXT USERS STACK                                    22375000 T  0296:1
       BEGIN CHAR ← (S ← PRT[MIX,8]).[32:1];%                                       22376000 T  0296:1
           S ← S INX 0; BS ← PRT[MIX,10].[FF];%                                     22377000 T  0299:1
   % GO DO STACK SEARCH AND PRT FIX-UP FOR ANOTHER USER                            22378000 T  0302:2
           GO TO BACKAGAIN;%                                                        22379000 T  0302:2
       END;%                                                                        22380000 T  0303:0
                                                                                                22376000
$ SET OMIT = NOT(AUXMEM)                                                            22380049 T  0303:0
$ SET OMIT = AUXMEM                                                                 22383049 T  0303:0
       SEGDICT[MOM]←(*P(DUP))&MOM[FTF];%                                            22383050 T  0303:0
       FORGETSPACE(FRONT); P(AWAKEN,DEL,TRUE); GO EXIT;                             22383100 T  0305:1
$ POP OMIT                                                                          22383101 T  0308:0
   % NOW WAS THAT NOT TRIVIALITY PERSONIFIED...                                     22384000 T  0308:0
   MCP:%                                                                            22385000 T  0308:0
       IF P(LINK,[AREATYPEF],DUP)=TYPE7INTAREAV OR%                 %167-          22386000 P  0308:0
          P(XCH)=TYPE13INTAREAV THEN GO TO INTRINSIC;%              %167-          22386010 C  0309:2
       IF LINK,[AREATYPEF]=DATAAREAV THEN % OVERLAYABLE MCP DATA    %167-          22386100 P  0311:1
          BEGIN                                                                     22386150 T  0312:2
      COMMENT  MCP TABLES CAN BE MARKED AS OVERLAYABLE SO THAT THEY CAN             22386200 T  0313:0
        REMAIN IN CORE WHEN IN USE AND BETWEEN USES BUT CAN BE REMOVED              22386204 T  0313:0
        WHEN THE SPACE IS NEEDED. PREVIOUSLY THEY HAD TO BE LEFT IN                 22386208 T  0313:0
        CORE PERMANENTLY OR READ FROM DISK WITH EACH USE.  EACH TABLE               22386212 T  0313:0
        NEEDS A "DESCRIPTOR" TELLING ITS PRESENCE [2:1], ITS ADDRESS                22386216 T  0313:0
        [33:15], AND THE NUMBER OF PROCESSES ACCESSING IT[18:15].                   22386220 T  0313:0
        MEMORY LINKS MUST BE HANDLED AS IN LBMESS.  WHEN AN AREA IS                 22386224 T  0313:0
        IN USE, THE PAIR (MIX=0,TYPE=2(DATA)) IN WORD 1 OF THE MEMORY               22386228 T  0313:0
        LINK INDICATES SUCH AN AREA;                                                22386232 T  0313:0
             IF M[MOM].[FF] = 0 THEN                                                22386250 T  0313:0
                BEGIN  %CAN OVERLAY: NO ONE IS WAITING                              22386300 T  0315:0
                   M[MOM] := 0;  % MARK ABSENT                                      22386350 T  0315:2
                   FORGETSPACE(FRONT);                                              22386400 T  0317:0
                   P(TRUE); %SIGNAL SUCCESS                                         22386450 T  0317:3
                   GO EXIT;                                                         22386500 T  0318:0
                END                                                                 22386550 T  0318:2
                                                                                                22386300
             ELSE BEGIN P(FALSE); GO EXIT END                                       22386600 T  0318:2
                                                                                                22386600
          END;                                                                      22386650 T  0319:3
                                                                                                22386150
```

```
     X ← -2;  BS ← (P(0,RDF)).[FF];%                                                22387000 T  0319:3
% SET BS TO POINT AT RCW FOR CALL ON OLAY                                          22388000 T  0322:2
     DO BEGIN%                                                                      22389000 T  0322:2
          OLAY ← NOT(S ← ((CORE ← (T ← M[BS]).[CF])≤BACK                            22390000 T  0322:2
                    AND CORE≥FRONT));%                                           22391000 T  0325:0
% S IS TRUE IF THE RCW POINTS TO THE ROUTINE TO BE OVERLAID                        22392000 T  0327:3
          BS ← T.[FF];%                                                          22393000 T  0327:3
% POINT T TO CORRESPONDING MSCW                                                   22394000 T  0329:0
          WHILE (T ← M[BS]).[16:1] DO BS ← T.[FF];%                              22395000 T  0329:0
% RUN DOWN STACK OF MSCWS UNTIL NOT MSFF                                          22396000 T  0333:1
          IF (BS ← T.[FF])≤64 THEN                                               22397000 T  0333:1
% END OF STACK -- THIS IS RATIONALE FOR OBSCURE USE OF "P(0,STF)"                 22398000 T  0335:0
            BS ← BED[X ← X+2].[FF];%                                             22399000 T  0335:0
     END UNTIL (X>JOBNUM) OR S;%                                                 22400000 T  0338:0
                                                                                                 22389000
     IF RESULT THEN%                                                            22401000 T  0339:3
     BEGIN M[MOM] ← (*P(DUP))&(*P(.ESPBIT))[CTC];%                              22402000 T  0340:0
          FORGETSPACE(FRONT);%                                                  22403000 T  0343:0
     END;%                                                                      22404000 T  0343:3
                                                                                                 22402000
     P(RESULT AND 1); GO EXIT;                                                  22405000 T  0343:3
INTRINSIC:%                                                                     22406000 T  0345:0
     FOR MIX←1 STEP 1 UNTIL MIXMAX DO%                                          22407000 T  0345:0
     IF INTABLEROW[MIX]≠0 THEN%                                                 22408000 T  0346:0
     BEGIN IF MIX=P2MIX THEN STOP;%                                             22409000 T  0347:0
          IF (T ← M[PRT[MIX,8]].[CF])≥FRONT AND T≤BACK%                         22410000 T  0350:0
          THEN BEGIN P(AWAKEN); GO EXIT;                                        22411000 T  0353:2
               END;                                                             22411020 T  0356:2
                                                                                                 22411000
     END;%                                                                      22412000 T  0356:2
                                                                                                 22409000
     FOR MIX←1 STEP 1 UNTIL MIXMAX DO%                                          22413000 T  0358:3
     IF INTABLEROW[MIX]≠0 THEN                                                  22413010 T  0360:0
     BEGIN SEGNO ← MOM.[8:10]-1;%                                               22415000 T  0361:0
          STREAM(A ← SEGNO AND 3; T ← [INTABLE[MIX,SEGNO DIV 4]]);              22416000 T  0363:1
          BEGIN SI ← T;  SI ← SI+A;  SI ← SI+A;  DI ← LOC A;%                   22417000 T  0366:1
               DI ← DI+6;  DS ← 2 CHR;  END STREAMING;%                         22418000 T  0367:3
                                                                                                 22417000
          IF (SEGNO ← POLISH)≠0 THEN%                                           22419000 T  0368:2
          IF SEGNO = @2000 THEN INT13 ELSE                                      22419500 T  0369:2
          BEGIN CHAR ← P(PRT[MIX,8], DUP).[32:1];%                              22420000 T  0372:0
               TYPE13:=SEGNO.[37:1];                                            22420200 T  0376:1
               SEGNO:=SEGNO AND @1777; %IGNORE TYPE 13 BIT                      22420500 T  0377:2
               S ← POLISH INX 0;  BS ← PRT[MIX,10].[FF];%                       22421000 T  0378:3
               SEGDICT ← PRT[MIX,4];%                                           22422000 T  0381:3
               X:=SEGDICT[SEGNO].[8:10];                                        22423000 T  0383:1
               IF TYPE13 AND NOT PRT[MIX,X].[2:1] THEN                          22423100 T  0385:1
% TYPE 13 REFERENCE ALSO EXISTS AND TYPE 7 REFERENCE IS NOT PRESENT              22423200 T  0387:2
                    INT13 ELSE                                                  22423300 T  0387:2
               BEGIN                                                            22423400 T  0389:0
               CODEOVERLAY;                                                     22423500 T  0389:2
               SEGDICT[SEGNO] ← (*P(DUP))&MOM[FTF];%                            22424000 T  0391:0
               END;                                                             22424500 T  0393:1
                                                                                                 22423400
          END;%                                                                 22425000 T  0393:1
                                                                                                 22420000
     END;%                                                                      22426000 T  0393:1
```

```
                                                                                22415000
          INTRNSC[MOM,[8:10]] ← (*P(DUP))&MOM[FTC];%                  22427000 T  0395:2
          FORGETSPACE(FRONT);%                                        22428000 T  0398:0
          P(AWAKEN,DEL,TRUE);                                         22429000 T  0398:3
EXIT:                                                                 22429100 T  0400:2
 $ SET OMIT = NOT(NEWLOGGING)                                         22429199 T  0400:2
 $ SET OMIT = NOT(WORKSET)                                            22429210 T  0400:2
          IF P1MIX NEQ 0 THEN                                         22429220 T  0400:2
             OLAYTIME[P1MIX]:=(*P(DUP))+(CLOCK+P(RTR)-MCPTEMP);       22429230 T  0401:1
 $ POP OMIT % WORKSET                                                 22429231 T  0404:3
          P(RTN);                                                     22429300 T  0404:3
    END OF OVERLAY;%     REVISION OF MAY 31, 1967...                22430000 T  0405:0
                                                                                22230000
                                                                      SIZE= 0406 WORDS
```

```
                PROCEDURE CHANGEABORT(X); VALUE X; REAL X;%                                                    22900000 T  0000:0
                                                                                                  START OF REL SEGMENT: DISK ADDRESS = 00758
                BEGIN ARRAY A[*], B[*];%                                                                       22901000 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
                     REAL J, T;%                                                                               22902000 T  0000:0
STACK(F+3) = J
STACK(F+4) = T

                     A←[M[SPACE(210)]]&210[8:38:10];                                                           22903000 T  0000:0
                     SLEEP([TOGLE], ABORTMASK);%                                                               22904000 T  0000:0
                     LOCKTOG(ABORTMASK);                                                                       22905000 T  0004:3
                                                                                                               22906000 T  0006:1
                                                                                                                           22906000
                     DISKWAIT(=A,[CF],210,ESPDISKTOP+1);                                                       22907000 T  0009:3
                     WHILE (A[0]:=XCLOCK+P(RTR)) GEQ WITCHINGHOUR DO MIDNIGHT;                                 22909000 T  0012:2
                                                                                                                           22909000
                     A[1] ← DATE;%                                                                             22910000 T  0020:2
                     J ← 3×P1M[X];%                                                                            22911000 T  0021:3
                     A[J] ← A[J+1] ← A[J+2] ← 0;%                                                              22912000 T  0023:0
                     B←JARROW[P1M[X];   %CANT WATCH JAR AND LOSE CONTROL, TOO.                                 22913000 T  0027:1
                     A[J+90] ← B[0];                                                                           22914000 T  0028:1
                     A[J+91] ← B[1];                                                                           22915000 T  0030:1
                     A[J+92] ← X&B[5][1:25:23];                                                                22916000 T  0032:1
                     A[180+P1M[X]←USERCODE[P1M[X]];                                                            22917000 T  0035:1
                     DISKWAIT(A,[CF],210,ESPDISKTOP+1);                                                        22918000 T  0037:1
                     UNLOCKTOG(ABORTMASK);                                                                     22920000 T  0039:3
                                                                                                                           22920000
                     FORGETSPACE(A);%                                                                          22921000 T  0043:1
                END;%                                                                                          22922000 T  0044:1
                                                                                                                           22901000
                                                                                                                 SIZE= 0045 WORDS
```

```
                $ SET OMIT = NOT(DATACOM )                                                                  22999999 T  000:0
               REAL SPACESTACK;                                                                             23500000 T  000:0
PRT(665) = SPACESTACK
                SAVE PROCEDURE FORGETSPACE(LOC);%                                                           24000000 T  000:0
                                                                                          START OF SAVE SEGMENT; BASE ADDRESS = 00655
                                    VALUE LOC;%                                                             24001000 T  000:0
                                    REAL LOC;%                                                              24002000 T  000:0
                    BEGIN%                                                                                  24003000 T  000:0
                        REAL B,BACK,F,FRONT,LINK,X,T,SIZE;%                                                 24004000 T  000:0
STACK(F+1) = B
STACK(F+2) = BACK
STACK(F+3) = F
STACK(F+4) = FRONT
STACK(F+5) = LINK
STACK(F+6) = X
STACK(F+7) = T
STACK(F+10) = SIZE
                    LOC ← *P(.LOC) INX 0 -2;%                                                               24005000 T  000:0
                    IF (B← M[BACK← (LINK← M[LOC]).[FF]]).[CF]≠LOC OR                                        24006000 T  000:0
                         (F←M[FRONT←LINK.[CF]]).[FF]≠LOC OR LINK<0 THEN                                     24007000 T  000:0
                            PUNT(3);              % INVALID LINK                                            24007100 T  001:0
                    IF F<0 THEN % FOLLOWING AREA IS AVAILABLE                                               24007200 T  001:1
                            BEGIN%                                                                          24008000 T  001:0
                             M[LOC]←LINK &F[CTC];%  POINT TO NEW FOLLOWING AREA                             24009000 T  001:2
                             M[F]←M[F] & LOC[CTF];% MAKE NEW FOLLOWING AREA POINT BACK TO HERE              24010000 T  001:2
                             M[T←M[FRONT+2]]←M[T] &(X←M[FRONT+1])[CTC];%                                    24011000 T  002:1
                             M[X+1]←T%                                                                      24012000 T  002:2
                            END;%                                                                           24013000 T  002:3
                                                                                                                     24008000
                IF B<0%
                     THEN%  PRECEDING AREA IS AVAILABLE                                                     24014000 T  002:2
                          BEGIN%                                                                            24015000 T  003:0
                           M[BACK]←B&(T←M[LOC].[CF])[CTC];%                                                 24016000 T  003:1
                           M[T]←M[T]& BACK[CTF];%                                                           24017000 T  003:3
                           M[BACK+1]←M[BACK+1]&(SIZE←T-BACK-2)[CTF];%                                       24018000 T  003:2
                          END%                                                                              24019000 T  003:1
                                                                                                            24020000 T  004:2
                                                                                                                     24016000
                     ELSE   %BACK IN USE                                                                    24021000 T  004:2
                          BEGIN%                                                                            24022000 T  004:2
                           M[LOC+2]←AVAIL;%                                                                 24023000 T  004:3
                           M[LOC+1]←(T←M[AVAIL]) &(SIZE←M[LOC].[CF ]-LOC-2)[CTF                             24024000 T  004:0
                           ];%                                                                              24025000 T  005:0
                           M[T+1]←LOC+1;%                                                                   24026000 T  005:3
                           M[AVAIL]←T &(LOC+1)[CTC]%                                                        24027000 T  005:2
                          ; M[LOC]←-M[LOC]%                                                                 24028000 T  005:4
                          END;%                                                                             24029000 T  005:0
                                                                                                                     24022000
   IF LOC≤LEFTOFF THEN IF M[LOC].[CF]>LEFTOFF THEN LEFTOFF←M[LOC].[FF];                                     24030000 T  005:3
$ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                                                    24030100 T  006:2
   END FORGETSPACE;%                                                                                        24031000 T  006:0
                                                                                                                     24003000
                                                                                                          SIZE= 0065 WORDS
```

```
                SAVE INTEGER PROCEDURE ACTSPACE(SIZE,SAVEF);                                    24032050 T  0000:0
                                                                        START OF SAVE SEGMENT; BASE ADDRESS = 00720
PRT(666) = ACTSPACE
                  VALUE SIZE,SAVEF; REAL SIZE; BOOLEAN SAVEF;                                   24032100 T  0000:0
                  BEGIN REAL LINK,LOC,X,Y,T;                                                    24032200 T  0000:0
STACK(F+2) = LINK
STACK(F+3) = LOC
STACK(F+4) = X
STACK(F+5) = Y
STACK(F+6) = T
                 $ SET OMIT = NOT(STATISTICS)                                                   24032300 T  0000:0
                       REAL SIZEF,LOS;                                                          24032700 T  0000:0
STACK(F+7) = SIZEF
STACK(F+10) = LOS
                       LABEL SVSTART,SVSEARCH,START,OVSEARCH,XX,ROCKABYE;                        24032800 T  0000:0
                       IF SAVEF THEN%  ATTEMPT TO ALLOCATE AT START OF MEMORY                   24032900 T  0000:0
                       BEGIN                                                                    24033000 T  0002:1
                SVSTART:       LINK:=M[0];                                                      24033100 T  0002:3
                SVSEARCH:      IF (LOC:=LINK.[CF])=0 THEN GO TO ROCKABYE;                       24033200 T  0003:2
                               IF (LINK ← M[LOC])≥0 THEN%                                       24033300 T  0005:3
                               BEGIN IF NOT LINK.[2:1] THEN%                                    24033400 T  0007:3
                                     BEGIN  % OVRLAY ONLY IF POTENTIAL SPACE ADEQUATE           24033500 T  0009:1
                                          SIZEF ← -2; X ← T ← LOC;                              24033600 T  0009:3
                                          IF (Y←LINK.[FF]) ≠ 0 THEN                             24033700 T  0012:0
                                            IF M[Y] < 0 THEN SIZEF←M[(T←Y)+1].[FF];             24033800 T  0013:3
                                          WHILE SIZE>SIZEF AND (Y←M[X]).[1:2]≠1 DO              24033900 T  0019:1
                                          SIZEF ← SIZEF - X + (X ← Y.[CF]);                     24034000 T  0023:1
                                          IF SIZE > SIZEF THEN                                  24034100 T  0026:2
                                          BEGIN LINK ← Y;  GO SVSEARCH; END;                    24034200 T  0027:1
                                                                                                                24034200
                                          IF OLAY(LOC) THEN % RE-SET "LINK"                     24034300 T  0029:0
                                            IF (Y←M[LINK←T])>0 OR Y.[CF]=LOC                    24034400 T  0029:3
                                            OR M[Y].[FF]≠LINK THEN                              24034500 T  0033:2
                                             % MEM LINK AT "T" NO LONGER VALID                  24034600 T  0036:2
                                            GO TO SVSTART ELSE GO TO SVSEARCH                   24034700 T  0036:2
                                          ELSE GO TO SVSEARCH;                                  24034750 T  0037:2
                                     END ELSE                                                   24034800 T  0037:2
                                                                                                                24033500
                                     GO TO SVSEARCH;%                                           24034900 T  0037:2
                               END;%                                                            24035000 T  0037:2
                                                                                                                24033400
                               IF (SIZEF ← M[T←LOC+1].[FF])<SIZE THEN GO SVSEARCH;%             24035100 T  0037:2
                               M[ACTSPACE:=LOC]:=ABS(LINK&1[2:47:1]);                           24035200 T  0041:2
                               LINK ← M[T];   M[LINK+1] ← Y ← M[T+1];%                          24035300 T  0044:3
                               M[Y] ← (*P(DUP))&LINK[CTC];%                                     24035400 T  0050:0
                               IF SIZEF>SIZE+DELTA THEN%                                        24035500 T  0052:1
                               BEGIN M[LOC] ← (X ← *P(DUP))&(Y ← LOC+SIZE+2)[CTC];%             24035600 T  0053:2
                                    M[X] ← (*P(DUP))&Y[CTF];%                                   24035700 T  0058:1
                                    M[Y] ← X.[CF]&LOC[CTF];%                                    24035800 T  0060:2
                                    FORGETSPACE(Y+2);%                                          24035900 T  0063:0
                               END;%                                                            24036000 T  0064:1
                                                                                                                24035600
                         END ELSE                                                               24036100 T  0064:1
                                                                                                                24033000
                         IF SAVEF>63 OR TOGLE.MEMNO=0 THEN                                      24036125 T  0064:1
                         BEGIN% ALLOCATE ON "SPACE AVAILABLE" BASIS                             24036150 T  0067:0
START:%                                                                                         24036200 T  0067:2
```

```
                    IF (LINK ← POLISH(M[AVAIL], 0, SIZE, CFX, LLL,%                 24036300 T  0067:2
                      0, INX, .T, STD)).[FF]=@77777 THEN%                           24036400 T  0069:2
                    BEGIN%                                                          24036500 T  0072:1
OVSEARCH:%                                                                          24036600 T  0072:3
                         IF (LINK:=M[LEFTOFF]).[1:2] = 0 THEN                       24036700 T  0072:3
                         BEGIN% OVERLAY ONLY IF POTENTIAL SPACE ADEQUATE            24036800 T  0075:1
                              SIZEF:=-2; X:=LEFTOFF;                                24036900 T  0075:3
                              IF (Y:=LINK.[CF]) ≠ 0 THEN                            24037000 T  0077:2
                                   IF M[Y] < 0 THEN SIZEF ← M[Y+1].[FF];            24037100 T  0079:1
                              WHILE SIZE > SIZEF AND (Y←M[X]).[1:2]≠1 DO            24037200 T  0084:1
                              BEGIN SIZEF←SIZEF+Y.[CF]-X; X←Y.[FF] END;             24037300 T  0088:1
                                                                                                24037300
                              IF SIZE > SIZEF THEN                                  24037400 T  0094:0
                              BEGIN LEFTOFF ← Y.[FF];                               24037500 T  0094:3
                              IF LEFTOFF=0 OR X=0 THEN GO TO XX                     24037600 T  0096:2
                              ELSE GO TO OVSEARCH END;                              24037700 T  0098:1
                                                                                                24037500
                              IF (IF P1MIX=0 THEN 1 ELSE                            24037900 T  0099:1
                                   IF (X:=LINK.[9:6])≠P1MIX THEN 1 ELSE             24038000 T  0101:1
                                   ((TWO(X) AND OLAYMASK)≠0)) THEN                  24038100 T  0104:1
                                   IF OLAY(LEFTOFF) THEN GO TO START;               24038200 T  0106:0
                         END;%                                                      24038300 T  0108:0
                                                                                                24036800
                         IF (LEFTOFF←LINK.[FF])=0 THEN                              24038400 T  0108:0
XX:                      IF LOS THEN GO TO ROCKABYE ELSE LOS←1;                     24038500 T  0109:3
                         GO TO OVSEARCH;                                            24038600 T  0112:0
                    END;%                                                           24038700 T  0112:2
                                                                                                24036500
                    IF (SIZEF ← LINK.[FF])>SIZE+DELTA THEN%                         24038800 T  0112:2
                    BEGIN M[T] ← LINK&(X ← SIZEF-SIZE-2)[CTF];%                     24038900 T  0114:3
                         LOC ← T+X+1;%                                              24039000 T  0118:3
                         X ← (Y ← M[T-1])&(T-1)[CTF];%                              24039100 T  0120:2
                         M[Y] ← (*P(DUP))&LOC[CTF];%                                24039200 T  0124:0
                         M[T-1] ← Y&LOC[CTC];%                                      24039300 T  0126:1
                    END ELSE                                                        24039400 T  0128:3
                                                                                                24038900
                    BEGIN                                                           24039450 T  0128:3
                         M[LINK+1] ← Y ← M[T+1];%                                   24039500 T  0129:1
                         M[Y] ← (*P(DUP))&LINK[CTC];%                               24039600 T  0133:0
                         X ← M[LOC ← T-1];%                                         24039700 T  0135:1
                    END;%                                                           24039800 T  0137:3
                                                                                                24039450
                    M[ACTSPACE:=LOC]:=ABS(X&1[2:47:1]);                             24039900 T  0137:3
               END ELSE GO TO SVSTART;          % MEMNO≠0                          24040000 T  0141:0
                                                                                                24036150
 $ SET OMIT = NOT(STATISTICS)                                                       24040100 T  0141:0
               M[LOC+1]:=0;                                                         24041900 T  0141:0
ROCKABYE:                                                                           24042000 T  0143:0
  END ACTSPACE;                                                                     24042100 T  0143:0
                                                                                                24032200
                                                                                  SIZE= 0144 WORDS
```

```
                SAVE INTEGER PROCEDURE GETSPACE(SIZE,TYPE,SAVEF);                                   24042200 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00864
                  VALUE SIZE,TYPE,SAVEF;                                                            24042300 T  0000:0
                  REAL SIZE,TYPE; BOOLEAN SAVEF;                                                    24042400 T  0000:0
                  BEGIN                                                                             24042500 T  0000:0
                        REAL COUNT,T,MESS;                                                          24042550 T  0000:0
STACK(F+2) = COUNT
STACK(F+3) = T
STACK(F+4) = MESS
                  %                                                                  %156-          24042555 C  0000:0
                  %           FIELDS OF SAVEF PARAMETER                              %156-          24042560 C  0000:0
                  %                                                                  %156-          24042565 C  0000:0
                              FIELD                                                  %156-          24042570 C  0000:0
                  %             NEEDOLAY            = 09:39  % THIS FIELD IS NON ZERO IF           24042575 C  0000:0
                                                           % REQUESTOR WANTS OLAY SPACE           24042580 C  0000:0
                               ,TYPENOMEMANDRETURN    = 45:01  %  IF SAVEF.[45:02] = 3 THEN       24042585 C  0000:0
                               ,JUSTRETURN            = 46:01  %  GETSPACE WILL TYPE OK MEM       24042590 C  0000:0
                               ,GETFROMFRONT          = 47:01  %  IF SUCCESSFULL,       %156-     24042595 C  0000:0
                               ;                                                         %156-     24042596 C  0000:0
                        LABEL NEWSTART;                                                             24042600 T  0000:0
                        SUBROUTINE TELLSPO;                                                         24042625 T  0000:0
                        BEGIN P(MESS#0 OR SAVEF.[45:2]=3);                                %156-     24042650 P  0001:0
                              IF (MESS:=GETSPACE(3,0,2)+2)=2 THEN PUNT(3);                          24042675 T  0003:1
                              M[MESS-2],[9:6]:=0;                                         %549-     24042680 C  0007:1
                              STREAM(X:=P: P1MIX, SIZE, MESS);                                      24042700 T  0010:2
                              BEGIN SI:=LOC P1MIX; DS:=2 DEC;                                       24042725 T  0012:0
                                    DS:=8 LIT" NO MEM ";                                            24042750 T  0012:2
                                    DS:=5 DEC; DS:=5 LIT" WDS+";                                    24042775 T  0013:3
                                    X(DI:=DI-17; DS:=2 LIT"OK");                                    24042800 T  0015:0
                              END;                                                                  24042825 T  0016:2
                                                                                                          24042725
                              P(DEL);                                                               24042850 T  0016:3
                              IOREQUEST(MESS&@274[1:40:8], P(DUP),                                  24042875 T  0017:0
                                [17]&@231[10:40:8]);                                                24042900 T  0018:3
                        END OF TELLING SPO ABOUT NO MEMS;                                           24042925 T  0020:1
                                                                                                          24042650
NEWSTART:                                                                                           24042950 T  0020:2
                  IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);                                     24043000 T  0022:0
                  LOCKTOG(STOREMASK);                                                               24043100 T  0025:0
                                                                                                          24043100
 $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                                           24043200 T  0028:2
                  P(SPACESTACK,STS);                                                                24043500 T  0028:2
                  T:=ACTSPACE(SIZE,SAVEF);                                                          24043600 T  0029:1
                  P([MESS],STS);                                                                    24043700 T  0030:3
                  UNLOCKTOG(STOREMASK);                                                             24043800 T  0031:2
                                                                                                          24043800
                  IF T=0 THEN                                                                       24043900 T  0035:0
                        BEGIN NOMEMTOG:=1;                                                          24044000 T  0035:3
                              IF SAVEF.JUSTRETURN THEN P(0,RTN);                  %156-     24044100 P  0038:0
                              IF SAVEF.TYPENOMEMANDRETURN THEN                    %156-     24044110 C  0039:3
                              BEGIN                                               %156-     24044120 C  0040:2
                                    TELLSPO;                                      %156-     24044130 C  0041:0
                                    P(0,RTN);                                     %156-     24044140 C  0042:0
                              END;                                                %156-     24044150 C  0042:2
                                                                                                          24044120
                              NOMEM:=NOMEM+1;                                                       24044200 T  0042:2
                              TAR[P1MIX],[20:1]:=1;                                                 24044250 T  0045:1
```

```
                    IF (COUNT←COUNT+1)>5 THEN                                    24044300 T  0047:3
                      IF MESS=0 THEN TELLSPO;                                    24044400 T  0049:2
                    SLEEP([CLOCK], NOT CLOCK);%                                  24045100 T  0052:0
                    NOMEM←NOMEM-1;                                               24045200 T  0053:3
                    TAR[P1MIX].[20:1]:=0;                                        24045250 T  0056:2
                    GO TO NEWSTART;%                                             24045300 T  0059:0
                END;%                                                            24045400 T  0059:2
                                                                                             24044000
        MTGETSPACE:=T]:=(*P(DUP))&TYPE[3:42:6]&P1MIX[9:42:6];                    24045500 T  0059:2
        IF MESS≠0 OR SAVEF.[45:2]=3 THEN TELLSPO;                      %156-     24045600 P  0063:3
END GETSPACE;                                                                    24046200 T  0068:0
                                                                                             24042500
                                                                                 SIZE= 0069 WORDS
```

```
                    SAVE INTEGER PROCEDURE DISKSPACE(WORDS,MIX,AUX);                                    24101000 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00933
                    VALUE WORDS,MIX,AUX;                                                               24102000 T  0000:0
                    INTEGER WORDS,MIX; REAL AUX;                                                       24103000 T  0000:0
                       BEGIN ARRAY LOC=+2[*];                                                          24104000 T  0000:0
STACK(F+2) = LOC
                             INTEGER   INDEX=NT1,                                                      24105000 T  0000:0
PRT(160) = INDEX
                                       SEG  =NT2,                                                      24106000 T  0000:0
PRT(161) = SEG
                                       CNTRS=NT3,                                                      24107000 T  0000:0
PRT(162) = CNTRS
                                       SIZE =NT4,                                                      24108000 T  0000:0
PRT(163) = SIZE
                                       LIMIT=NT5;                                                      24109000 T  0000:0
PRT(164) = LIMIT
                             REAL      T    =NT6;                                                      24110000 T  0000:0
PRT(165) = T
                             LABEL     L1,                                                             24111000 T  0000:0
                                       FINAL,                                                          24112000 T  0000:0
                                       BADEXIT,                                                        24112500 T  0000:0
                                       EXIT;                                                           24113000 T  0000:0
                             DEFINE    HEURISTIC = 2#;                                                 24114000 T  0000:0
                             REAL SUBROUTINE FINDSEG;                                                  24115000 T  0000:0
                             BEGIN;  STREAM(A←0:T);                                                    24116000 T  0001:0
                                       BEGIN SI←LOC T;  SI←SI+3;                                       24117000 T  0002:1
                                            5(IF SC="0" THEN JUMP OUT TO L;                            24118000 T  0002:3
                                              SI←SI+1;  TALLY←TALLY+1));                               24119000 T  0004:0
                                       L:   A←TALLY;                                                   24120000 T  0004:3
                                       END STREAM;                                                     24121000 T  0005:0
                                                                                                                    24117000
                                  FINDSEG ← POLISH                                                     24122000 T  0005:1
                             END FINDSEG;                                                              24123000 T  0005:1
                                                                                                                    24116000
                             SUBROUTINE FIND;                                                          24124000 T  0005:3
                             BEGIN POLISH(0);                                                          24125000 T  0006:0
                                  T ← LOC[INDEX];                                                      24126000 T  0006:1
                                  SEG ← T.[9:3];                                                       24127000 T  0007:1
                                  CNTRS ← T.[2:7];                                                     24128000 T  0008:2
                                  IF SEG>4 THEN                                                        24129000 T  0009:3
L1:                                 IF (SEG ← FINDSEG)=5 THEN GO TO FINAL                              24130000 T  0010:2
                                  ELSE CNTRS ←0;                                                       24131000 T  0013:0
                                  IF SIZE+CNTRS>100 THEN GO TO L1;                                     24132000 T  0014:1
                                  P(DEL,(INDEX×256)+SEG×100+CNTRS);                                    24133000 T  0016:0
                                  STREAM(A←0:SEG,T←[T]);                                               24134000 T  0018:2
                                  BEGIN SI←T;  SI←SI+3;  SI←SI+SEG;                                    24135000 T  0020:0
                                       DI←LOC A;  DI←DI+7;  SEG←DI;                                    24136000 T  0021:0
                                       T←SI;  DS←CHR;  TALLY←A;                                        24137000 T  0021:3
                                       TALLY←TALLY+1;  A←TALLY;                                        24138000 T  0023:0
                                       SI←SEG;  DI←T;  DS←CHR;                                         24139000 T  0023:2
                             L5:;                                                                      24139500 T  0024:1
                                  END STREAM;                                                          24140000 T  0024:1
                                                                                                                    24135000
                                  IF (POLISH=63) OR (CNTRS ← CNTRS+SIZE)=100 THEN                      24141000 T  0024:2
                                  BEGIN CNTRS ← 0;  SEG ← FINDSEG END;                                 24142000 T  0027:0
                                                                                                                    24142000
                                  LOC[INDEX] ← T&SEG[9:45:3]&CNTRS[2:41:7];                            24143000 T  0029:2
```

```
   FINAL:     IF (DISKSPACE ← POLISH)≠0 THEN                                  24144000 T  0032:3
              BEGIN IF SEG=5 THEN INDEX ← 0;                                  24145000 T  0033:3
                   LOC[0] ← LIMIT&INDEX[CTF];                                 24146000 T  0036:1
                   GO TO EXIT;                                                24147000 T  0038:0
         END  END FIND;                                                       24148000 T  0038:2
                                                                                            24145000
                                                                                            24125000
$ SET OMIT = NOT(AUXMEM)                                                     24148999 T  0038:3
         P(DALOCROW[MIX]);                                                   24150000 T  0038:3
         SIZE ← (WORDS+29) DIV 30;                                           24151000 T  0039:3
         IF (LIMIT := LOC[0].[CF])=0 THEN GO TO BADEXIT;                     24152000 T  0041:2
         IF (INDEX ← LOC[0].[FF])≠0 THEN FIND;                               24153000 T  0044:0
         INDEX ← 2;                                                          24154000 T  0048:0
         DO FIND UNTIL (INDEX := INDEX+2)>LIMIT;                             24155000 T  0048:3
   BADEXIT:                                                                  24155500 T  0052:1
         DISKSPACE ← -1;                                                     24156000 T  0052:1
   EXIT:                                                                     24157000 T  0053:1
$ SET OMIT = NOT(STATISTICS)                                                 24157199 T  0053:1
         STREAM(A←0;L←LIMIT.[41:6].T←[LOC[1]]);                              24158000 T  0053:1
         BEGIN SI←T;  DI←A;                                                  24159000 T  0055:2
              L(SI←SI+11;                                                    24160000 T  0056:0
                5(IF SC="0" THEN DI←DI+8;  SI←SI+1));                        24161000 T  0056:3
              A←DI;                                                          24162000 T  0058:2
         END STREAM;                                                         24163000 T  0058:3
                                                                                            24159000
         IF (POLISH<HEURISTIC) THEN                                          24164000 T  0059:0
              IF ((SEG ← TWO(MIX)) AND OLAYMASK)≠0 THEN                      24165000 T  0059:2
              BEGIN OLAYMASK ← NOT SEG AND OLAYMASK;                         24166000 T  0062:1
                   INDEPENDENTRUNNER(P(.GETMOREOLAYDISK),MIX,100); %         24167000 P  0064:1
              END;                                                           24168000 T  0065:2
                                                                                            24166000
   END DISKSPACE;                                                            24169000 T  0065:2
                                                                                            24104000
                                                                                  SIZE= 0066 WORDS
```

```
                SAVE PROCEDURE DISKRTN(SEGNO, SIZE);                                                24200000 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 00999
                   VALUE     SEGNO, SIZE;                                                           24201000 T  0000:0
                   INTEGER   SEGNO, SIZE;                                                           24202000 T  0000:0
                   BEGIN INTEGER  INDEX=NT1,                                                        24203000 T  0000:0
PRT(160) = INDEX
                                  WORD =NT2,                                                        24204000 T  0000:0
PRT(161) = WORD
                                  COUNT=NT3,                                                        24205000 T  0000:0
PRT(162) = COUNT
                                  DRUM =NT4,                                                        24206000 T  0000:0
PRT(163) = DRUM
                                  X    =NT5;                                                        24207000 T  0000:0
PRT(164) = X
                         ARRAY    LOC  =+1[*];                                                     24208000 T  0000:0
STACK(F+1) = LOC
                         LABEL    L;                                                               24209000 T  0000:0
                $ SET OMIT = NOT(AUXMEM)                                                          24209099 T  0000:0
                         P(DALOC[P1MIX,*]);                                                       24210000 T  0000:0
                         COUNT ← TWO(24-6×(SEGNO.[39:9] DIV 100));                                24211000 T  0000:2
                         X ← (INDEX ← 0&SEGNO[41:33:6])-1;                                        24212000 T  0003:3
                         IF (WORD ← LOC[INDEX].[18:30]-COUNT)=0 THEN                              24213000 T  0006:2
                         BEGIN LOC[INDEX] ← 0;                                                    24214000 T  0009:0
                   L:          IF P(LOC[0].[FF],DUP)≠0 THEN                                       24221000 T  0010:3
                                 IF LOC[POLISH-1]≤0 THEN P(XIT);                                  24222000 T  0012:2
                               LOC[0] ← (*P(DUP))&INDEX[CTF];                                     24223000 T  0015:0
                         END ELSE BEGIN LOC[INDEX]← (*P(DUP))&WORD[18:18:30];                     24224000 T  0017:0
                                                                                                                 24214000
                               IF LOC[X]<0 THEN                                                   24225000 T  0020:0
                                 IF (WORD DIV COUNT).[42:6]=0 THEN GO TO L;                       24226000 T  0021:0
                END  END  DISKRTN;                                                                24227000 T  0023:3
                                                                                                                 24224000
                                                                                                                 24203000
                                                                                                  SIZE= 0024 WORDS
```

```
                $ SET OMIT = NOT(DATACOM )                                                    24499999 T  0000:0
                $ SET OMIT = NOT(SHAREDISK)                                                   24599999 T  0000:0
                $ SET OMIT = NOT(DATACOM AND DCSPO )                                          24999999 T  0000:0
                $ SET OMIT = NOT(DATACOM )                                                    25049999 T  0000:0
                $ SET OMIT = NOT(B6500LOAD)                                                   27990099 T  0000:0
               PROCEDURE LIBRARYHELP(Z); VALUE Z; REAL Z;                                     28000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00760
PRT(667) = LIBRARYHELP
               %                                                                              28000002 T  0000:0
               %*************************************************************************    28000004 T  0000:0
               %                                                                              28000006 T  0000:0
               %                                                                              28000008 T  0000:0
               %   LIBRARYHELP PERFORMS INFREQUENTLY NEEDED TASKS FOR THE OTHER               28000010 T  0000:0
               %   LIBRARY MAINTENANCE PROCEDURES.  IT SHARES LOCALS BY USING THE             28000012 T  0000:0
               %   SAME STACK AS ITS CALLING PROCEDURE, LIBRARYCOPY OR                        28000014 T  0000:0
               %   LIBRARYTRANSFER.                                                           28000016 T  0000:0
               %                                                                              28000018 T  0000:0
               %                                                                              28000020 T  0000:0
               %   0:    A) SETS UP FPB ENTRY FOR INPUT SOURCE TAPE                           28000022 T  0000:0
               %         B) RETURNS DIRECTORY LEAVING TAPE POSITIONED AFTER                   28000024 T  0000:0
               %            ENDING LABEL OF DIRECTORY                                       28000026 T  0000:0
               %                                                                            28000028 T  0000:0
               %   1:    RETURNS AFTER SECURING A NEW INPUT SOURCE TAPE                       28000030 T  0000:0
               %                                                                            28000032 T  0000:0
               %   2:    ABORT FROM LIBRARYTRANSFER                                           28000034 T  0000:0
               %                                                                            28000036 T  0000:0
               %   3:    SETS UP FPB ENTRY FOR INPUT SOURCE DISK                              28000038 T  0000:0
               %                                                                            28000040 T  0000:0
               %   4:    ABORT FROM LIBRARYCOPY                                               28000042 T  0000:0
               %                                                                            28000044 T  0000:0
               %   5:    INITIALIZATION OF LIBRARYTRANSFER INCLUDING LOCATION                 28000046 T  0000:0
               %         OF SPECIFIED OUTPUT UNIT                                           28000048 T  0000:0
               %                                                                            28000050 T  0000:0
               %   6:    ERROR HANDLING OR REEL SWITCHING                                     28000052 T  0000:0
               %                                                                            28000054 T  0000:0
               %   7:    WRITING DIRECTORY IF NOT REEL 1                                      28000056 T  0000:0
               %                                                                            28000058 T  0000:0
               %   8:    EXTRA RECORDS DETECTED IN CURRENT FILE                               28000060 T  0000:0
               %                                                                            28000062 T  0000:0
               %   9:    BAD HEADER DETECTED ON SOURCE                                        28000064 T  0000:0
               %                                                                            28000066 T  0000:0
               %   10:   INVALID RECORD SIZE ON LAST READ OR WRITE                          28000068 T  0000:0
               %                                                                            28000070 T  0000:0
               %   11:   KEYIN REEL SWITCH                                                  28000072 T  0000:0
               %                                                                            28000074 T  0000:0
               %                                                                            28000076 T  0000:0
               %*************************************************************************  28000078 T  0000:0
               %                                                                            28000080 T  0000:0
               BEGIN                                                                        28000200 T  0000:0
                   REAL COMMON=-4,                                                          28000400 T  0000:0
STACK(F-4) = COMMON
                        MSCW=-2,              RCW=+0,                                       28000500 T  0000:0
STACK(F-2) = MSCW
STACK(F+0) = RCW
                        MFID=RCW+1,           FID=MFID+1,                                   28000600 T  0000:0
STACK(F+1) = MFID
STACK(F+2) = FID
```

```
STACK(F+3) = ASMFID
STACK(F+4) = ASFID

STACK(F+5) = TMP
STACK(F+6) = TEMP

STACK(F+7) = FA
STACK(F+10) = FAINFO

STACK(F+11) = FASZ
STACK(F+12) = FAIN

STACK(F+13) = IU
STACK(F+14) = T

STACK(F+15) = FPBPTR
STACK(F+16) = IREEL

STACK(F+17) = NM1
STACK(F+20) = NM2

STACK(F+21) = DESTIN
STACK(F+22) = TOGS

STACK(F+23) = DA
STACK(F+24) = CCAIN
STACK(F+24) = OU

STACK(F+25) = EAIN
STACK(F+25) = OREEL
STACK(F+26) = NAIN
STACK(F+26) = N

STACK(F+27) = NA
STACK(F+27) = CNT
STACK(F+30) = NASZ
STACK(F+30) = INC

STACK(F+31) = LSX
STACK(F+31) = OUC
STACK(F+32) = BUMPFA
STACK(F+32) = Y

STACK(F+33) = POOL
STACK(F+33) = W
STACK(F+34) = INDX
STACK(F+34) = SIZE

STACK(F+35) = UN
STACK(F+35) = Q
STACK(F+36) = SEG
STACK(F+36) = J

STACK(F+37) = MAX
STACK(F+37) = TM
STACK(F+40) = K
```

```
ASMFID=FID+1,          ASFID=ASMFID+1,                                  28000800 T  0000:0

TMP=ASFID+1,           TEMP=TMP+1,                                      28001000 T  0000:0

FA=TEMP+1,             FAINFO=FA+1,                                     28001200 T  0000:0

FASZ=FAINFO+1,         FAIN=FASZ+1,                                     28001400 T  0000:0

IU=FAIN+1,             T=IU+1,                                          28001600 T  0000:0

FPBPTR=T+1,            IREEL=FPBPTR+1,                                  28001800 T  0000:0

NM1=IREEL+1,           NM2=NM1+1,                                       28002000 T  0000:0

DESTIN=NM2+1,          TOGS=DESTIN+1,                                   28002200 T  0000:0

DA=TOGS+1,                   CCAIN=DA+1, OU=CCAIN,                      28002400 T  0000:0


FAIN=CCAIN+1, OREEL=FAIN,    NAIN=EAIN+1, N=NAIN,                       28002600 T  0000:0


NA=NAIN+1, CNT=NA,           NASZ=NA+1, INC=NASZ,                       28002800 T  0000:0


LSX=NASZ+1, OUC=LSX,         BUMPFA=LSX+1, Y=BUMPFA,                    28003000 T  0000:0


POOL=BUMPFA+1, W=POOL,       INDX=POOL+1, SIZE=INDX,                    28003200 T  0000:0


UN=INDX+1, Q=UN,             SEG=UN+1, J=SEG,                           28003400 T  0000:0


MAX=SEG+1, TM=MAX,           K=MAX+1,                                   28003600 T  0000:0
```

```
                    L=K+1, U=L,                    MIDPTR=L+1, SV=MIDPTR,                    28003800 T  0000:0
STACK(F+41) = L
STACK(F+41) = U
STACK(F+42) = MIDPTR
STACK(F+42) = SV
                    UNITNO=MIDPTR+1;                                                         28004000 T  0000:0
STACK(F+43) = UNITNO
              ARRAY                                                                          28004200 T  0000:0
                    CCA=UNITNO+1[*], H=CCA[*],     X=CCA+1[*], AROW=X[*],                    28004400 T  0000:0
STACK(F+44) = CCA
STACK(F+44) = H
STACK(F+45) = X
STACK(F+45) = AROW
                    PAP=X+1[*], IOD=PAP[*],        LAB=PAP+1[*],                             28004600 T  0000:0
STACK(F+46) = PAP
STACK(F+46) = IOD
STACK(F+47) = LAB
                    LBL=LAB+1[*],                  WRDSZ=LBL+1[*];                           28004800 T  0000:0
STACK(F+50) = LBL
STACK(F+51) = WRDSZ
          $ SET OMIT = NOT(B6500LOAD)                                                        28005000 T  0000:0
            LABEL TRYNEXT,TRYAGN,FINDIT,BAC,BACK,P1,P2,P3,EXIT,ST,TAPEPAR;                   28005800 T  0000:0
            LABEL CASE0,CASE1,CASE2,CASE3,CASE4,CASE5,CASE6,CASE7,CASE9;                     28006000 T  0000:0
            DEFINE                                                                           28006200 T  0000:0
                 BACKSPACER  = 5&@3400[CTF]#,                                                28006400 T  0000:0
                 SPACER      = 5&@1400[CTF]#,                                                28006600 T  0000:0
                 MM          = @37700040#,                                                   28006800 T  0000:0
                 SM          = @37700000#,                                                   28007000 T  0000:0
                 DSED        = (TERMSET(P1MIX))#,                                            28007200 T  0000:0
                 UNITNUM     = [1:5]#,                                  %148-                28007300 C  0000:0
                 SPOUTUNIT   = 0#,                                                           28007400 T  0000:0
                 FORKED      = TOGS.[23:1]#,                                                 28007600 T  0000:0
                 B6500       = TOGS.[24:1]#,                                                 28007800 T  0000:0
                 OF          = TOGS.[26:1]#,                                                 28008000 T  0000:0
                 FROMCOPY    = TOGS.[27:1]#,                                                 28008200 T  0000:0
                 REELSW      = TOGS.[33:1]#,                                                 28008400 T  0000:0
                 REEL1START  = TOGS.[34:1]#,                                                 28008600 T  0000:0
                 SKIPDIR     = TOGS.[35:1]#,                                                 28008800 T  0000:0
                 SPACITSW    = TOGS.[36:1]#,                                                 28009000 T  0000:0
                 CHKLBL      = TOGS.[37:1]#,                                                 28009200 T  0000:0
                 COPYING     = TOGS.[38:1]#,                                                 28009300 T  0000:0
                 OUTAPEPARITY= TOGS.[39:1]#,                                                 28009400 T  0000:0
                 SKIPFILE    = TOGS.[40:1]#,                                                 28009600 T  0000:0
                 DUMPDIR     = TOGS.[42:1]#;                                                 28009800 T  0000:0
          SWITCH SWIT:=CASE0,CASE1,CASE2,CASE3,CASE4,CASE5,CASE6,CASE7,                      28010000 T  0000:0
                      P2,CASE9,P1,TAPEPAR;                                                   28010200 T  0000:0
          %*********************************************************                       28010400 T  0000:0
          DEFINE NOTCOPIED(NOTCOPIED1) =                                                     28010600 T  0000:0
               BEGIN NT3:=NOTCOPIED1; NOCOPYMESS; END#;                                      28010800 T  0000:0
          SUBROUTINE NOCOPYMESS;                                                             28011000 T  0000:0
               LBMESS( ABS(MFID), FID, -67, NT3, TINU[IU], SPOUTUNIT, 1 );                   28011200 P  0001:0
          %*********************************************************                       28011400 T  0004:1
          SUBROUTINE ABORT;                                                                  28011600 T  0004:1
          BEGIN                                                                              28011800 T  0005:0
               IF COPYING                                                                    28011810 T  0005:0
                THEN IF OU=18                                                                28011820 T  0005:0
                       THEN BEGIN P(DIRECTORYSEARCH(MFID,FID,6),DEL);                        28011830 T  0006:2
```

```
                OE:=0; % NOT OPENED EXCLUSIVE                                    28011832 T  0009:0
            END                                                                  28011834 T  0010:3
                                                                                             28011830
        ELSE BEGIN P(WAITIO([TM],@40,OU),DEL);                                   28011840 T  0010:3
                   P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                         28011850 T  0012:3
             END;                                                                28011860 T  0015:0
                                                                                             28011840
IF NOT FROMCOPY THEN                                                             28012000 T  0015:0
 BEGIN IF OU GEQ 0 THEN                                                          28012010 T  0016:0
        BEGIN IF OU LSS 16 THEN                                                  28012020 T  0017:1
               BEGIN BLASTQ(OU);                                                 28012030 T  0018:2
                     P(WAITIO([TM],@40,OU),DEL);                                 28012040 T  0019:3
                     SETNOTINUSE(OU,1);                                          28012060 T  0021:1
               END;                                                              28012070 T  0022:1
                                                                                             28012030
              STOPTIMING(0,1023);                                                28012080 T  0022:1
        END;                                                                     28012090 T  0023:1
                                                                                             28012020
       IF IU GEQ 0 THEN                                                          28012100 T  0023:1
        IF IU LSS 16 THEN BLASTQ(IU);                                            28012110 T  0024:0
 END ELSE                                                                        28012120 T  0026:2
                                                                                             28012010
  WHILE CCA[29] NEQ 0 DO                                                         28012130 T  0026:2
   BEGIN SEG:=CCA[29]; DISKWAIT(-CCA,[CF],30,SEG);                               28012140 T  0029:2
         FORGETESPDISK(SEG);                                                     28012150 T  0032:3
   END;                                                                          28012160 T  0033:2
                                                                                             28012140
FOR TMP:=0 STEP 1 UNTIL (FAIN DIV 2) DO                                          28012800 T  0034:0
 IF (TEMP:=M[FAINFO+TMP]).[CF]=18 THEN                                           28013000 T  0038:1
  IF TEMP.[17:1] THEN ELSE                                                       28013200 T  0041:1
   P(DIRECTORYSEARCH(-(TEMP.[FF]),13,20),DEL);                                   28013400 T  0043:0
 IF OF THEN P(DIRECTORYSEARCH(-MFID,FID,14),DEL);                                28013600 T  0046:1
 IF FORKED                                                                       28013800 T  0049:1
  THEN BEGIN IF IU GEQ 0 THEN                                                    28014000 T  0049:1
              IF IU LSS 16 THEN SETNOTINUSE(IU,0);                               28014100 T  0051:1
             STOPTIMING(FPBPTR,1023);                                            28014200 T  0054:0
       END                                                                       28014400 T  0055:0
                                                                                             28014000
  ELSE FOR TMP:=5 STEP 5 UNTIL (NT1:=PRT[P1MIX,3]).[8:10]=5 DO                   28014600 T  0055:0
        IF M[NT1 INX (TMP+4)] LSS 0 THEN                                         28014800 T  0061:2
         BEGIN IF (TEMP:=M[NT1 INX (TMP+3)],[36:6]=1) LSS 16                     28015000 T  0064:0
                THEN SETNOTINUSE(TEMP,0);                                        28015200 T  0068:0
               STOPTIMING(TMP,1023);                                             28015400 T  0070:0
         END;                                                                    28015600 T  0071:0
                                                                                             28015000
 FOR TMP:=0 STEP 1 UNTIL 15 DO                                                   28015800 T  0071:2
  IF LABELTABLE[TMP] LSS 0 THEN                                                  28016000 T  0073:0
   IF RDCTABLE[TMP].[8:6]=P1MIX THEN SETNOTINUSE(TMP,0);                         28016200 T  0074:0
$ SET OMIT = PACKETS                                                             28017200 T  0079:3
 STREAM(T:=T:=SPACE(5));                                                         28018000 T  0079:3
  BEGIN DS:=21LIT"LIBRARY COPY ABORTED←"; END;                                   28018200 T  0082:2
                                                                                             28018200
 SPOUT(T);                                                                       28018400 T  0085:3
 GO INITIATE;                                                                    28018600 T  0087:0
END;                                                                             28018800 T  0087:2
                                                                                             28011800
%*************************************************************                   28019000 T  0087:3
```

```
   BOOLEAN SUBROUTINE LABELCHECK;                                                    28019200 T  0087:3
   BEGIN                                                                             28019400 T  0088:0
   TRYNEXT:                                                                          28019600 T  0088:0
        P(WAITIO(LAB INX @120540000000,0,IU),DEL);                                   28019800 T  0088:0
$ SET OMIT = NOT(B6500LOAD)                                                          28020000 T  0090:1
        IF @40≠WAITIO(SPACER,@40,IU) THEN                                            28021800 T  0090:1
             P(WAITIO(@4740000005,0,IU),DEL);                                        28022000 T  0092:2
        IF DSED THEN ABORT;                                                          28022200 T  0094:2
        IF (NOT B6500 AND ((NFLAG(LAB[0]),[6:42] EQV "LABEL  ")≠NOT 0                28022400 T  0098:0
        OR (NFLAG(LAB[2]),[6:24] EQV "FILE")≠NOT 0))                                 28022600 T  0101:2
$ SET OMIT = NOT(B6500LOAD)                                                          28022800 T  0105:0
        THEN BEGIN                                                                   28023600 T  0105:0
             STREAM(A:=[TINU[IU]],T:=T:=SPACE(10));                                  28023800 T  0105:3
             BEGIN SI:=A;SI:=SI+5;DS:=LIT".";DS:=3 CHR;                              28024000 T  0109:0
                  DS:=21 LIT" NOT A LIBRARY TAPE.";                                  28024200 T  0110:1
             END;                                                                    28024400 T  0113:1
                                                                                                 28024000
             SPOUT(T); T:=1;                                                         28024600 T  0113:2
             END ELSE T:=0;                                                          28024800 T  0115:2
                                                                                                 28023600
        IF T=0 AND NOT B6500 THEN                                                    28025000 T  0120:3
        IF NFLAG(LAB[2]),[30:18]=0 AND SKIPDIR THEN                                  28025200 T  0122:3
        BEGIN                                                                        28025400 T  0126:0
        SPACITSW:=1; CHKLBL:=FALSE;                                                  28025600 T  0126:2
        GO TO BACK; %BRANCH INTO SPACIT.                                             28025800 T  0130:0
   BAC:                                                                              28026000 T  0130:2
        SPACITSW:=0; CHKLBL:=TRUE;                                                   28026200 T  0130:2
        GO TO TRYNEXT;                                                               28026400 T  0134:0
        END;                                                                         28026600 T  0134:2
                                                                                                 28025400
        LABELCHECK:=T;                                                               28026800 T  0134:2
    END;                                                                             28027000 T  0135:0
                                                                                                 28019400
    %************************************************************                   28027200 T  0135:1
    SUBROUTINE FINDTHETAPE;                                                          28027400 T  0135:1
    BEGIN                                                                            28027600 T  0136:0
FINDIT:                                                                              28027800 T  0136:0
        IF (IU:=FINDINPUT(NM1,NM2,IREEL,=0,0,0,0,0,1,FPBPTR)) < 0                    28028000 T  0136:0
         THEN ABORT;                                                                 28028100 T  0139:3
        NM1.UNITNUM:=0;                                                %148-         28028110 C  0142:0
        IREEL:=RDCTABLE[IU].[14:10]; %FORCE REEL CONTINUITY IF IL-ED.                28028200 T  0143:3
        RRRMECH:=TWO(IU) OR RRRMECH;                                                 28028400 T  0145:1
        B6500:=PRNTABLE[IU].[2:1];                                                   28028600 T  0147:0
 $ SET OMIT = NOT(B6500LOAD)                                                         28028800 T  0149:2
        IF CHKLBL THEN IF LABELCHECK THEN                                            28029400 T  0149:2
        BEGIN                                                                        28029600 T  0152:0
             SETNOTINUSE(IU,1);                                                      28029800 T  0152:2
             GO FINDIT;                                                              28030000 T  0153:2
        END;                                                                         28030200 T  0154:0
                                                                                                 28029600
%       STARTIMING(FPBPTR,IU);              DONE IN FINDINPUT                        28030400 T  0154:0
%       M[PRT[P1MIX,3] INX (5×IREEL+3)],[23:1] := 1;                                 28030600 T  0154:0
        RDCTABLE[IU],[6:6]:=P1MIX;                                                   28030800 T  0154:0
        STREAM (S:=PRNTABLE[IU],[18:30],T:=[T]);                                     28031000 T  0156:2
        BEGIN SI:=LOC S; DS:=8DEC; DI:=DI-7; DS:=6FILL; END;                         28031200 T  0158:1
                                                                                                 28031200
 $ SET OMIT = PACKETS                                                                28031400 T  0159:2
```

```
        FILEMESSAGE(" IN "&T[NU[IU][6:30:18],T,                                  28032000 T  0159:2
                    NM1,NM2,IREEL,0,0,OPNMESS);                                  28032200 T  0161:2
    END; % OF FINDTHETAPE                                                        28032400 T  0163:3
                                                                                             28027600
    %************************************************************              28032600 T  0165:0
    BOOLEAN SUBROUTINE ENDOFREEL;                                                28032800 T  0165:0
    BEGIN                                                                        28033000 T  0165:0
        BLASTQ(IU);                                                              28033200 T  0165:0
        IF P(WAITIO(LAB INX @120540000000,@2000040,IU),DUP)=@20 THEN             28033400 T  0165:3
        BEGIN % PAR ON ENDING LABEL:TEST FOR LAST FILE ON TAPE(EOF)              28033600 T  0168:2
            LAB[4]:=(*P(DUP))&(WAITIO(SPACER,@40,IU)=@40)[47:47:1];              28033800 T  0169:0
            P(WAITIO(5&@3400[CTF],@377,IU),DEL);                                 28034000 T  0173:2
        END;                                                                     28034200 T  0175:2
                                                                                             28033600
$ SET OMIT = NOT(B6500LOAD)                                                      28034400 T  0175:2
        NT1:=P;                                                                  28036000 T  0175:2
        IF DSED THEN ABORT;                                                      28036200 T  0176:0
        IF ((NOT B6500) AND NFLAG(LAB[4]) AND NT1≠@40)                           28036400 T  0179:0
$ SET OMIT = NOT(B6500LOAD)                                                      28036600 T  0181:2
        THEN BEGIN                                                               28037200 T  0181:2
            STOPTIMING(FPBPTR,1023);%                                            28037400 T  0182:2
            SETNOTINUSE(IU,0);                                                   28037600 T  0183:2
            IREEL:=IREEL+1;                                                      28037800 T  0184:2
$ SET OMIT = NOT(B6500LOAD)                                                      28038000 T  0185:3
            NM2:=LAB[2];                                                         28039200 T  0185:3
            NM1:=LAB[1];                                                         28039400 T  0186:3
            FINDTHETAPE;                                                         28039600 T  0187:3
            ENDOFREEL:=TRUE;                                                     28039800 T  0189:0
            END ELSE ENDOFREEL:=FALSE;                                           28040000 T  0189:2
                                                                                             28037200
    END;      %   OF SUBROUTINE  ENDOFREEL                                       28040200 T  0193:2
                                                                                             28033000
    %************************************************************************  28040400 T  0193:3
    SUBROUTINE WRITENDINGLABEL;                                                  28040600 T  0193:3
    BEGIN                                                                        28040800 T  0194:0
        P(WAITIO([TM],@40,OU),DEL);                                              28041000 T  0194:0
        P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                                    28041400 T  0195:2
        IF DSED THEN ABORT;                                                      28041600 T  0197:3
    END; % OF WRITE ENDING LABEL                                                 28041800 T  0201:0
                                                                                             28040800
    %************************************************************              28042000 T  0203:0
    SUBROUTINE SPACIT;%                                                          28042200 T  0203:0
    BEGIN                                                                        28042400 T  0203:0
BACK:   WHILE WAITIO(SPACER,MM,IU)≠@40 DO                                        28042600 T  0203:0
        BEGIN                                                                    28042800 T  0205:3
            IF DSED THEN ABORT;                                                  28043000 T  0205:3
            IF STOPSET(PIMIX) THEN STOPM(0);                                     28043200 T  0209:0
        END;                                                                     28043400 T  0211:3
                                                                                             28042800
        IF ENDOFREEL AND NOT SPACITSW THEN GO BACK;                              28043600 T  0214:0
        IF SPACITSW THEN GO TO BAC; %BRANCH TO LABELCHECK ELSE EXIT              28043800 T  0217:0
    END;                                                                         28044000 T  0218:2
                                                                                             28042400
    %************************************************************************  28044200 T  0218:3
    SUBROUTINE SHORTHEADER;                                                      28044400 T  0218:3
    BEGIN                                                                        28044600 T  0219:0
        P(WAITIO(H&@5000[CTF]&20[8:38:10],@40,OU),DEL);                          28044800 T  0219:0
```

```
      WRITENDINGLABEL;                                                                28045000 T  0222:1
END;                                                                                  28045200 T  0223:0
                                                                                                  28044600
%*************************************************************                        28045400 T  0225:0
SUBROUTINE BACKSPACIT;                                                                28045600 T  0225:0
BEGIN                                                                                 28045800 T  0225:0
     WHILE WAITIO(BACKSPACER,MM,OU) ≠ @40 DO                                          28046000 T  0225:0
     BEGIN                                                                            28046200 T  0227:3
          IF DSED THEN ABORT;                                                         28046400 T  0227:3
          IF STOPSET(P1MIX) THEN STOPM(0);                                            28046600 T  0231:0
     END;                                                                             28046800 T  0233:3
                                                                                                  28046200
     P(WAITIO(.TM],@40,OU),DEL);          % WRITE THE TM BACK                       28047000 T  0237:0
END;                                                                                  28047200 T  0238:2
                                                                                                  28045800
%*********************************************************************               28047400 T  0238:3
BOOLEAN SUBROUTINE NOTLOADINGFROMREEL1;                                               28047600 T  0238:3
BEGIN %SKIP LAST PORTION OF FILE FROM PREVIOUS REEL                                   28047800 T  0239:0
     SPACIT;                                                                          28048000 T  0239:0
     IF LABELCHECK THEN P(0) ELSE                                                     28048200 T  0240:0
      IF (NFLAG(LAB[2]) EQV "FILE000") = NOT 0 THEN                                   28048400 T  0241:3
         BEGIN REEL1START:=FALSE; P(1) END ELSE P(0);                                 28048600 T  0244:1
                                                                                                  28048600
     NOTLOADINGFROMREEL1:=P;                                                          28048800 T  0249:1
END;                                                                                  28049000 T  0249:2
                                                                                                  28047800
%*************************************************************                        28049200 T  0249:3
P(Z,RCW,MSCW,STF); RCW:=RCW&P(XCH)[CTC];                                              28049400 T  0249:3
TEMP:=P; FROMCOPY:=(TEMP=0) OR (TEMP=3) OR (TEMP=4);                                  28049600 T  0252:2
GO TO SWIT[TEMP];                                                                     28049800 T  0257:1
CASE 0;                                                                               28050000 T  0264:1
CASE 3;                                                                               28050100 T  0264:1
     TMP:=PRT[P1MIX,3];                                                               28050200 T  0264:1
     FPBPTR:=FPBPTR+5;                                                                28050400 T  0265:3
     IF FPBPTR GTR 5 THEN                                                             28050600 T  0267:0
      BEGIN TMP:=GETSPACE(FPBPTR+ETRLNG,FPBAREAV,1)+2;%              %167-             28050800 P  0267:3
      MOVE(FPBPTR,PRT[P1MIX,3],TMP);                                                  28051000 T  0271:0
      FORGETSPACE(PRT[P1MIX,3],[CF]);                                                 28051200 T  0273:1
      NFO[(P1MIX-1)×NDX]:=PRT[P1MIX,3]:=                                              28051400 T  0275:1
       [M[TMP]]&(FPBPTR+ETRLNG)[8:38:10];                                             28051600 T  0277:3
      END;                                                                            28051800 T  0281:0
                                                                                                  28050800
     IF TEMP=3                                                                        28052000 T  0281:0
      THEN BEGIN                                                                      28052200 T  0281:1
           STREAM(B:=TMP INX FPBPTR);                                                 28052400 T  0282:1
            BEGIN DS:=16LIT"0D";RCTRY0D;SK    "; DS:=24LIT"0"; END;                   28052600 T  0283:2
                                                                                                  28052600
           STARTIMING(FPBPTR,18);                                                     28052800 T  0289:1
           GO EXIT;                                                                   28053000 T  0290:1
           END                                                                        28053200 T  0290:3
                                                                                                  28052200
      ELSE                                                                            28053400 T  0290:3
      STREAM(NM1:=NM1:=CCA[CCA[N+1],B:=(TMP INX FPBPTR));                             28053600 T  0290:3
      BEGIN DS:=LIT"0"; SI:=LOC NM1; SI:=SI+1; DS:=7CHR;                              28053800 T  0294:0
            DS:=8LIT"0FILE000"; DS:=24LIT"0";                                         28054000 T  0295:1
      END;                                                                            28054200 T  0299:3
                                                                                                  28053800
```

```
    IREEL:=1;                                                                  28054400 T  0300:0
    NM1:=CCA[CCAIN+1];                                                         28054600 T  0300:3
    NM2:="FILE000";                                                            28054800 T  0302:1
    REEL1START:=TRUE; CHKLBL:=TRUE;                                            28055000 T  0303:0
TRYAGN: FINDTHETAPE;                                                           28055200 T  0306:2
 $ SET OMIT = NOT(B6500LOAD)                                                   28055400 T  0308:0
    IF NM2≠LAB[2] OR IREEL≠1 THEN                                              28056000 T  0308:0
     IF NOT NOTLOADINGFROMREEL1 THEN                                           28056200 T  0310:0
         BEGIN STREAM(A:=[TINU[IU]],T:=T:=SPACE(10));                          28056400 T  0312:1
               BEGIN SI:=A;SI:=SI+5;DS:=LIT",";DS:=3CHR;                       28056600 T  0316:0
                     DS:=20 LIT" NOT A LIBRARY TAPE";                          28056800 T  0317:1
                     DS:=LIT".";                                               28057000 T  0320:0
               END;                                                            28057200 T  0320:2
                                                                                          28056600
               SPOUT(T); SETNOTINUSE(IU,1);                                    28057400 T  0320:3
               IREEL:=1;                                                       28057600 T  0323:0
               GO TO TRYAGN;                                                   28057800 T  0323:3
         END;                                                                  28058000 T  0326:0
                                                                                          28056400
    NM1:=LAB[1];                                                               28058200 T  0326:0
    SKIPDIR:=TRUE;                                                             28058400 T  0327:0
    X:=[M[T:=SPACE(1024)]]&1023[8:38:10];                                      28058600 T  0328:3
    P(WAITIO((                                                                 28058800 T  0333:0
 $ SET OMIT = NOT(B6500LOAD)                                                   28059000 T  0333:1
               X)&@5400[CTF],0,IU),DEL);                                       28059600 T  0333:1
 $ SET OMIT = NOT(B6500LOAD)                                                   28059800 T  0335:1
    IF DSED THEN ABORT;                                                        28061800 T  0335:1
    X:=[M[GETSPACE(DA:=M[T-1],0,1)+2]]&DA[8:38:10]; % RET XTRA SPACE           28062000 T  0338:0
    MOVE(DA,T,X);                                   % AND MAKE X SAVE          28062200 T  0343:2
    FORGETSPACE(T);                                                            28062400 T  0345:1
    CHKLBL:=FALSE;                                                             28062600 T  0346:0
    TMP:=0;                                                                    28062800 T  0347:3
    IF @40=WAITIO(LAB INX @120540000000,@40,IU) THEN                           28063000 T  0348:2
    IF B6500 THEN P(WAITIO(LAB INX @120540000000,0,IU),DEL) ELSE               28063200 T  0351:0
              TMP:=ENDOFREEL;                                                  28063400 T  0355:0
    IF NOT TMP THEN% CHECK ENDING LABEL IF NOT LAST FILE OR B6500LOAD           28063600 T  0360:2
    IF ((NOT B6500) AND (NFLAG(LAB[1])EQV NM1)≠NOT 0 OR                        28063800 T  0361:0
       (NFLAG(LAB[2]) EQV "FILE000")≠NOT 0)                                    28064000 T  0364:3
 $ SET OMIT = NOT(B6500LOAD)                                                   28064200 T  0366:1
    THEN BEGIN STREAM(A:=[TINU[IU]],TMP:=TMP:=SPACE(10));                      28065000 T  0366:1
         BEGIN SI := A; SI := SI+5; DS := LIT","; DS := 3 CHR;                 28065200 T  0370:3
               DS := 29 LIT " BAD FILE000 ON LIBRARY TAPE.";                   28065400 T  0372:0
         END;       SPOUT (TMP); ABORT;                                        28065600 T  0376:0
                                                                                          28065200
    END;                                                                       28065800 T  0379:0
                                                                                          28065000
    CHKLBL:=TRUE;                                                              28066000 T  0379:0
 $ SET OMIT = NOT(B6500LOAD)                                                   28066200 T  0380:3
    GO EXIT;                                                                   28067000 T  0380:3
CASE1:                                                                         28067200 T  0383:0
    FINDTHETAPE; GO EXIT;                                                      28067400 T  0383:0
CASE2: % FROM LIBRARYTRANSFER                                                  28067600 T  0384:2
CASE4: % FROM LIBRARYCOPY                                                      28067800 T  0384:2
    ABORT;                                                                     28068000 T  0384:2
CASE5:                                                                         28068200 T  0386:0
    OU:=IU:=-1; DA:=@77777; % INITIALIZE                                       28068400 T  0386:0
    FPBPTR:=0;                                                                 28068600 T  0388:1
```

```
CHKLBL:=TRUE; SKIPDIR:=TRUE;                                                    28068800 T  0389:0
IOD:=[M[GETSPACE(6,0,1)+2]]&2[8:38:10];                                         28069000 T  0392:2
WRDSZ:=4 INX IOD;                                                               28069200 T  0396:1
AROW:=2 INX IOD;                                                                28069400 T  0397:3
AROW[0]:=[M[GETSPACE(902,0,1)+2]]&901[8:38:10];                                 28069600 T  0399:1
AROW[1]:=AROW[0]&(GETSPACE(902,0,1)+2)[CTC];                                    28069800 T  0403:2
H:=[M[TYPEDSPACE(42,DISKHEADERAREAV)]] & 30[8:38:10];%          %167-            28070000 P  0407:0
     IF DESTIN.UNITNUM = 19 THEN                                %148-            28070200 P  0410:3
 BEGIN                                                                          28070400 T  0412:0
 COMMON:=IF DESTIN.[42:6] NEQ 0 THEN DESTIN OR M ELSE                           28070600 T  0412:2
         IF DESTIN.[40:1] THEN 1 OR M ELSE                                      28070800 T  0415:2
         IF DESTIN.[41:1] THEN 2 OR M ELSE 0;                                   28071000 T  0418:0
 OU:=18;                                                                        28071200 T  0421:1
 STREAM(B:=PRT[P1MIX,3] INX 0);                                                 28071400 T  0422:0
  BEGIN DS:=16LIT"0DIRCTRY0DISK    "; DS:=24LIT"0"; END;                        28071600 T  0424:0
                                                                                          28071600
 STARTIMING(0,OU);                                                              28071800 T  0429:3
 END                                                                            28072000 T  0430:3
                                                                                          28070400
 ELSE                                                                           28072200 T  0430:3
 BEGIN OREEL:=1;                                                                28072400 T  0430:3
 TM:=0&"≥←"[1:37:11];                                                           28072600 T  0433:3
 LBL:=[M[TAPELABEL(DESTIN,NM2:="FILE000",1,1,100)]]&10[8:38:10];                28072800 T  0435:2
 IF (OU:=LABELASCRATCH(LBL)) LSS 0 THEN ABORT;                                  28073000 T  0439:3
 STREAM(N:=DESTIN,B:=PRT[P1MIX,3] INX 0);                                       28073200 T  0443:0
  BEGIN DS:=LIT"0"; SI:=LOC N; SI:=SI+1; DS:=7CHR;                              28073400 T  0445:1
        DS:=8LIT"0FILE000"; DS:=24LIT"0";                                       28073600 T  0446:2
  END;                                                                          28073800 T  0451:0
                                                                                          28073400
 STARTIMING(0,OU);                                                              28074000 T  0451:1
 PRNTABLE[OU]:=(*P(DUP)) & (IOD)[15:33:15];                                     28074050 T  0452:1
 SV:=M[FAINFO];                                                                 28074200 T  0455:0
 M[FA+FASZ]:=@14; % TO REMAIN COMPATIBLE WITH EARLIER MCPS                       28074400 T  0456:2
 P(WAITIO(FA&(FASZ+1)[8:38:10]&@5000[CTF],@40,OU),DEL);                         28074600 T  0458:2
 M[FAINFO]:=SV;                                                                 28074800 T  0462:0
 WRITENDINGLABEL;                                                               28075000 T  0463:2
 END;                                                                           28075200 T  0465:0
                                                                                          28072400
    GO EXIT;                                                                    28075400 T  0465:0
CASE6:                                                                          28075600 T  0468:0
    IF Y.[7:1] AND Y.[27:1] THEN % END OF TAPE                                  28075800 T  0468:0
     IF Y.[24:1]                                                                28076000 T  0469:3
      THEN                          % EOF ON SOURCE                             28076200 T  0470:1
       BEGIN                                                                    28076400 T  0471:0
        IF NOT ENDOFREEL THEN                                                   28076600 T  0471:2
         BEGIN                                                                  28076800 T  0473:1
         P(WAITIO(@4740000020,@377,IU),DEL);                                    28077200 T  0473:3
         TEMP:=-1; % FOR NOTCOPIED MESSAGE AT P1                                28077400 T  0475:1
         IOD[1]:=IOD[0]:=IOMASK; GO P1;                                         28077600 T  0476:1
         END;                                                                   28077800 T  0480:0
                                                                                          28076800
        IF WAITIO(IOD[W] INX @16040540000000,SM,IU) NEQ 0                       28078000 T  0480:0
         THEN GO P1;                                                            28078200 T  0482:0
        IF IOD[1-W].[7:1] AND Y.[3:4]=IOD[1-W].[3:4] THEN                       28078400 T  0483:0
         BEGIN                                                                  28078600 T  0487:1
         IF WAITIO(IOD[1-W],SM,IU) NEQ 0 THEN GO P1;                            28078800 T  0487:3
         IOD[1-W]:=(*P(DUP)) OR IOMASK;                                         28079000 T  0490:3
```

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                END;                                                                    28079200 T  0493:1
                                                                                                    28078600
               END                                                                      28079400 T  0493:1
                                                                                                    28076400
              ELSE
               BEGIN                          % EOT ON DESTINATION                     28079600 T  0493:1
                IF IOD[1-W].[7:1] AND Y.[3:4]=IOD[1-W].[3:4] THEN                       28079800 T  0493:1
                 BEGIN                                                                  28080000 T  0496:0
                 SLEEP([IOD[1-W]],IOMASK);                                              28080200 T  0500:1
                 IF IOD[1-W].[28:1] THEN GO P3;                                         28080400 T  0500:3
                 IOD[1-W].[27:1]:=0;                                                    28080600 T  0503:0
                 END;                                                                   28080800 T  0505:1
                                                                                        28081000 T  0508:1
                                                                                                    28080200
TAPEPAR:LBL[4]:=(*P(DUP)) OR 1;                                                         28081200 T  0508:1
                IF LBL[2].[30:18]=0 THEN %FILE000 LAST FILE                             28081400 T  0510:1
                STREAM(A:=J+2,B:=[LBL[2]]);                                             28081600 T  0511:3
                BEGIN SI:=LOC A; DI:=DI+5; DS:=3 DEC END;                               28081800 T  0514:0
                                                                                                    28081800
                P(WAITIO([TM],@40,OU),DEL);                                             28082000 T  0515:0
                P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                                   28082200 T  0516:2
                P(WAITIO([TM],@40,OU),DEL);                                             28082400 T  0518:3
                STOPTIMING(0,1023);                                                     28082600 T  0520:1
                SETNOTINUSE(OU,1);                                                      28082800 T  0521:1
                LBL[4]:=(*P(DUP)) AND NOT(1);                                           28083000 T  0522:1
                STREAM(OREEL:=OREEL:=OREEL+1,LBL);                                      28083200 T  0524:2
                BEGIN SI:=LOC OREEL;                                                    28083400 T  0526:3
                 DI:=DI+24; DS:=3 DEC;                                                  28083600 T  0527:0
                END;                                                                    28083800 T  0527:2
                                                                                                    28083400
                IF (OU:=LABELASCRATCH(LBL)) LSS 0 THEN                                  28084000 T  0527:3
                 BEGIN COPYING:=FALSE; ABORT; END;                                      28084100 T  0529:3
                                                                                                    28084100
                STARTIMING(0,OU);                                                       28084200 T  0533:0
                PRNTABLE[OU]:=(*P(DUP)) & (IOD)[15:33:15];                              28084250 T  0534:0
                DUMPDIR:=TRUE; %DUMP DIRECTORY                                          28084400 T  0536:3
               END                                                                      28084600 T  0538:2
                                                                                                    28079800
              ELSE
              IF Y.[7:1] % TAPE PARITY                                                  28084800 T  0538:2
              THEN IF Y.[24:1]                                                          28085000 T  0538:2
                   THEN BEGIN % PARITY ON INPUT TAPE                                    28085200 T  0540:0
                                                                                        28085400 T  0541:1
        P1:             COMPLEXSLEEP((((IOD[0] AND IOD[1]) AND IOMASK) NEQ 0)           28085600 T  0542:2
                                OR DSED);                                               28085800 T  0542:2
20582440  ACCIDENTAL ENTRY AT 1
                        NOTCOPIED(27+((TEMP=10)×12)+((TEMP=(-1))×6));                   28086000 T  0552:0
                                                                                                    28086000
                        IF DSED THEN ABORT;                                             28086200 T  0557:0
                        SKIPFILE:=TRUE;                                                 28086400 T  0560:0
        P2:             BLASTQ(IU);                                                     28086600 T  0561:3
                        P(WAITIO(@4740000020,@377,IU),DEL);                             28086800 T  0562:3
                        IF J NEQ ((FASZ DIV 2)-1) THEN SPACIT;                          28087000 T  0564:1
                        IF OU=18                                                        28087200 T  0568:0
                         THEN P(DIRECTORYSEARCH(MFID,FID,6),DEL)                        28087400 T  0568:1
                         ELSE BEGIN                                                     28087600 T  0570:3
                              BACKSPACIT;                                               28087800 T  0573:0
                              SHORTHEADER;                                              28088000 T  0574:0
                              END;                                                      28088200 T  0575:0
```

```
                                                                                      28087600
                END                                                 28088400 T  0575:0
                                                                                      28085400
            ELSE BEGIN % PARITY ON OUTPUT TAPE                      28088600 T  0575:0
    P3:         IF IU LSS 16                                        28088800 T  0575:2
                 THEN BEGIN                                         28089000 T  0575:3
                      WHILE WAITIO(BACKSPACER,MM,IU) NEQ @40 DO     28089200 T  0576:3
                       BEGIN                                        28089400 T  0579:2
                       IF DSED THEN ABORT;                          28089600 T  0579:2
                       IF STOPSET(P1MIX) THEN STOPM(0);             28089800 T  0583:0
                       END;                                         28090000 T  0585:3
                                                                                      28089400
                      P(WAITIO(SPACER,@40,IU),DEL); % READ TM       28090200 T  0589:0
                   P(WAITIO((*[AROW[0]])&@5400[CTF],@2000000,IU),DEL);   28090400 T  0591:0
     $ SET OMIT = NOT (B6500LOAD)                                   28090600 T  0593:2
                   IF M[AROW[0] INX NOT 0] NEQ 30 THEN ABORT;       28091200 T  0593:2
                      END;                                          28091400 T  0598:0
                                                                                      28089000
                BACKSPACIT;                                         28091600 T  0598:0
                P(WAITIO(H&@5000[CTF],@40,OU),DEL);                 28091800 T  0599:0
                OUTAPEPARITY:=TRUE;                                 28092000 T  0601:1
                GO TAPEPAR;                                         28092200 T  0603:0
                END                                                 28092400 T  0607:0
                                                                                      28088600
          ELSE BEGIN % DISK PARITY                                  28092600 T  0607:0
               SKIPFILE:=TRUE;                                      28092800 T  0607:2
               BACKSPACIT;                                          28093000 T  0609:1
               SHORTHEADER;                                         28093200 T  0610:0
               NOTCOPIED(35);                                       28093400 T  0611:0
                                                                                      28093400
               P(DIRECTORYSEARCH(-(DA.[FF]),13,20),DEL);            28093600 T  0613:0
               M[FAINFO+J].[17:1]:=1; % MARK CLOSED FOR ABORT       28093800 T  0615:1
               M[FAINFO+J].[8:1]:=0; % DONT REMOVE IF UNLOAD   %757- 28093900 C  0618:2
               END;                                                 28094000 T  0621:3
                                                                                      28092600
         GO EXIT;                                                   28094200 T  0621:3
       CASE7:                                                       28094400 T  0622:1
         P(M[FA+1],M[FA]); % SAVE NAME FOR UNLOAD              %757- 28094500 C  0622:1
         M[FA]:=@114; M[FA+1]:=(J+1)x2;%FLAG [0], OFFSET [1]        28094600 T  0625:2
         LBL[2].[30:18]:=0; %FILE000                                28094800 T  0630:0
         P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                      28095000 T  0632:2
         P(WAITIO([TM],@40,OU),DEL);                                28095400 T  0634:3
         IF DSED THEN ABORT;                                        28095600 T  0636:1
         IOD[0]:=0; W:=1; SIZE:=FASZ+1;                             28095800 T  0639:0
         TMP:=M[FA+FASZ]; M[FA+FASZ]:=@14;                          28096000 T  0642:1
         IOREQUEST(-(IOD[W]:=(FA INX @500000000)&                   28096200 T  0646:1
                  SIZE[8:38:10]&TINU[OU][3:3:5]) OR @2017700000,    28096400 T  0647:3
               IOD[W],[IOD[W]]&OU[12:42:6]);                        28096600 T  0651:1
         COMPLEXSLEEP((((IOD[W]) AND IOMASK)≠0) OR DSED);           28096800 T  0653:2
28085800    ACCIDENTAL ENTRY AT 1
         M[FA+FASZ]:=TMP;                                           28097000 T  0661:1
         NT1:=P; M[FA]:=NT1; M[FA+1]:=P(XCH); % REPLACE NAMES  %757- 28097100 C  0663:1
         IF DSED THEN ABORT;                                        28097200 T  0667:1
         GO EXIT;                                                   28097400 T  0670:0
       CASE9:                                                       28097600 T  0674:0
             IF DESTIN.UNITNUM = 19                            %148- 28097800 P  0674:0
          THEN GO ST                                                28098000 T  0675:0
```

```
      ELSE BEGIN
           SHORTHEADER;
           IF IU=18 THEN
            BEGIN
            P(DIRECTORYSEARCH(=(DA,[FF]),13,20),DEL);
            M[FAINFO+J],[17:1]:=1; % MARK CLOSED FOR ABORT
            END      ELSE

            BEGIN
ST:         H[2]:=LAB[2];
            SPACIT;
            IF H[2] NEQ LAB[2] THEN ABORT;
            END;

           END;

     NOTCOPIED(43);

     GO EXIT;
EXIT: P(0,RDS,0,XCH,P&P[CTF],STF);
END OF LIBRARYHELP;
```

```
28098200 T  0675:1
28098400 T  0675:3
28098600 T  0677:0
28098800 T  0677:3
28099000 T  0678:1
28099200 T  0680:2
28099400 T  0683:3
                  28098800
28099600 T  0683:3
28099800 T  0684:1
28100000 T  0685:3
28100200 T  0687:0
28100400 T  0690:0
                  28099600
28100600 T  0690:0
                  28098200
28100800 T  0690:0
                  28100800
28101000 T  0692:0
28101200 T  0692:2
28101400 T  0695:0
                  28000200
          SIZE= 0696 WORDS
```

```
                PROCEDURE LIBRARYTRANSFER;                                                    28200000 T  0000:0
                                                                                START OF REL SEGMENT; DISK ADDRESS = 00784
PRT(670) = LIBRARYTRANSFER
                %                                                                             28200002 T  0000:0
                %*************************************************************************  28200004 T  0000:0
                %                                                                             28200006 T  0000:0
                %                                                                             28200008 T  0000:0
                %   LIBRARYTRANSFER PERFORMS THE ACTUAL PHYSICAL TRANSFER OF FILES            28200010 T  0000:0
                %   BASED ON INFORMATION SUPPLIED BY LIBRARYCOPY.  BASICALLY, ALL             28200012 T  0000:0
                %   LIBRARYTRANSFER NEEDS FROM LIBRARYCOPY IS "FA" (THE FILE ARRAY            28200014 T  0000:0
                %   WHICH CONTAINS THE NAME PAIRS TO BE TRANSFERRED), "FAINFO"                28200016 T  0000:0
                %   (THE FILE ARRAY INFORMATION, WHICH CONTAINS NECESSARY INFO.               28200018 T  0000:0
                %    ABOUT EACH NAME PAIR), AND "DESTIN" (THE USER SPECIFIED                  28200020 T  0000:0
                %   DESTINATION).                                                             28200022 T  0000:0
                %                                                                             28200024 T  0000:0
                %   TRANSFERS MAY BE MADE FROM TAPE TO TAPE, TAPE TO DISK, OR                 28200026 T  0000:0
                %   DISK TO TAPE.  LIBRARYTRANSFER WILL ATTEMPT TO TRANSFER DATA              28200028 T  0000:0
                %   FROM THE INPUT SOURCE SPECIFIED IN THE "FAINFO" ENTRY TO THE              28200030 T  0000:0
                %   UNIT SPECIFIED THRU "DESTIN".  THE BULK OF LIBRARYTRANSFER IS             28200032 T  0000:0
                %   JUST LOOPING THROUGH "FAINFO" USING ONE ENTRY AT A TIME UNTIL             28200034 T  0000:0
                %   THEY ARE EXHAUSTED.  AT EACH CHANGE OF INPUT SOURCE THE FPB               28200036 T  0000:0
                %   IS FIXED UP DIFFERENTLY DEPENDING UPON WHETHER THE JOB WAS                28200038 T  0000:0
                %   FORKED OR NOT (REFER TO DOCUMENTATION).                                   28200040 T  0000:0
                %                                                                             28200042 T  0000:0
                %                                                                             28200044 T  0000:0
                %   DA            CURRENT "FAINFO" ENTRY                                      28200046 T  0000:0
                %     .[CF]       IF DISK THEN 18                                             28200048 T  0000:0
                %                 IF TAPE THEN UNIT NUMBER OF THE TAPE                        28200050 T  0000:0
                %     .[FF]       IF DISK THEN DISK ADDRESS OF FILE HEADER                    28200052 T  0000:0
                %                 IF TAPE THEN NUMBER OF THIS FILE ON TAPE                    28200054 T  0000:0
                %     .[5:1]      SPECIFIES LATEST VERSION WANTED                             28200056 T  0000:0
                %     .[6:1]      FILE TO BE ADDED                                            28200058 T  0000:0
                %     .[8:1]      FILE TO BE UNLOADED                                         28200060 T  0000:0
                %     .[13:1]     FILE TO BE ADDED (NOT ON DISK)                    %160-     28200061 C  0000:0
                %                                                                             28200062 T  0000:0
                % NOTE: ANY OPTIONS SET THAT DO NOT APPLY TO A PARTICULAR                     28200064 T  0000:0
                %       CIRCUMSTANCE WILL BE IGNORED                                          28200066 T  0000:0
                %                                                                             28200068 T  0000:0
                %   IU            CURRENT INPUT UNIT                                          28200070 T  0000:0
                %                                                                             28200072 T  0000:0
                %   OU              "    OUTPUT  "                                            28200074 T  0000:0
                %                                                                             28200076 T  0000:0
                %   IREEL         CURRENT INPUT REEL NUMBER (IF TAPE)                         28200078 T  0000:0
                %                                                                             28200080 T  0000:0
                %   OREEL           "    OUTPUT  "    "        "                             28200082 T  0000:0
                %                                                                             28200084 T  0000:0
                %   FA            FILE ARRAY OF NAME PAIRS TO BE TRANSFERRED                  28200086 T  0000:0
                %                                                                             28200088 T  0000:0
                %   FAINFO        TRANSFER INFO. FOR EACH NAME PAIR                           28200090 T  0000:0
                %                                                                             28200092 T  0000:0
                %   FPBPTR        CURRENT FPB ENTRY INDEX                                     28200094 T  0000:0
                %                                                                             28200096 T  0000:0
                %   H             CURRENT FILE HEADER                                         28200098 T  0000:0
                %                                                                             28200100 T  0000:0
                %   LAB           LAST INPUT LABEL READ                                       28200102 T  0000:0
                %                                                                             28200104 T  0000:0
                %   LBL           LAST OUTPUT LABEL READ                                      28200106 T  0000:0
```

```
                    %
                    %   TOGS.[21:1] (BHS)           INDICATES BAD HEADER                                    28200108 T  0000:0
                    %                                                                                       28200110 T  0000:0
                    %        [23:1] (FORKED)        NOT ORIGINATING LIBMAIN/DISK                            28200112 T  0000:0
                    %        [26:1] (OF)            CURRENT <MFID>/<FID> HAS BEEN                           28200114 T  0000:0
                    %                               OPENED EXCLUSIVE                                        28200116 T  0000:0
                    %                                                                                       28200118 T  0000:0
                    %        [28:1] (SOMECOPIED)    AT LEAST ONE FILE HAS BEEN                              28200120 T  0000:0
                    %                               TRANSFERED                                              28200122 T  0000:0
                    %        [38:1] (COPYING)       NOTES STAGE OF PROCESSING FOR                           28200124 T  0000:0
                    %                               USE BY ABORT                                            28200126 T  0000:0
                    %        [40:1] (SKIPFILE)      USED TO INDICATE ABRUPT EXIT TO                         28200128 T  0000:0
                    %                               NEXT FILE SHOULD BE TAKEN                               28200130 T  0000:0
                    %                                                                                       28200132 T  0000:0
                    %                                                                                       28200134 T  0000:0
                    %***********************************************************************              28200136 T  0000:0
                    %                                                                                       28200138 T  0000:0
                    BEGIN                                                                                   28200200 T  0000:0
                        REAL COMMON=-4,                                                                     28200400 T  0000:0
STACK(F-4) = COMMON
                             MSCW=-1,           RCW=+0,                                                     28200800 T  0000:0
STACK(F-1) = MSCW
STACK(F+0) = RCW
                             MFID=RCW+1,        FID=MFID+1,                                                 28201000 T  0000:0
STACK(F+1) = MFID
STACK(F+2) = FID
                             XX1=FID+1,         XX2=XX1+1,                                                  28201200 T  0000:0
STACK(F+3) = XX1
STACK(F+4) = XX2
                             TMP=XX2+1,         TEMP=TMP+1,                                                 28201400 T  0000:0
STACK(F+5) = TMP
STACK(F+6) = TEMP
                             FA=TEMP+1,         FAINFO=FA+1,                                                28201600 T  0000:0
STACK(F+7) = FA
STACK(F+10) = FAINFO
                             FASZ=FAINFO+1,     FAIN=FASZ+1,                                                28201800 T  0000:0
STACK(F+11) = FASZ
STACK(F+12) = FAIN
                             IU=FAIN+1,         T=IU+1,                                                     28202000 T  0000:0
STACK(F+13) = IU
STACK(F+14) = T
                             FPBPTR=T+1,        IREEL=FPBPTR+1,                                             28202200 T  0000:0
STACK(F+15) = FPBPTR
STACK(F+16) = IREEL
                             NM1=IREEL+1,       NM2=NM1+1,                                                  28202400 T  0000:0
STACK(F+17) = NM1
STACK(F+20) = NM2
                             DESTIN=NM2+1,      TOGS=DESTIN+1,                                              28202600 T  0000:0
STACK(F+21) = DESTIN
STACK(F+22) = TOGS
                             DA=TOGS+1,         OU=DA+1,                                                    28202800 T  0000:0
STACK(F+23) = DA
STACK(F+24) = OU
                             OREEL=OU+1,        N=OREEL+1,                                                  28203000 T  0000:0
STACK(F+25) = OREEL
STACK(F+26) = N
                             CNT=N+1,           INC=CNT+1,                                                  28203200 T  0000:0
STACK(F+27) = CNT
```

```
STACK(F+30) = INC
                        OUC=INC+1,          Y=OUC+1,                                28203400 T  0000:0
STACK(F+31) = OUC
STACK(F+32) = Y
                        W=Y+1,              SIZE=W+1,                               28203600 T  0000:0
STACK(F+33) = W
STACK(F+34) = SIZE
                        Q=SIZE+1,           J=Q+1,                                  28203800 T  0000:0
STACK(F+35) = Q
STACK(F+36) = J
                        TM=J+1,             K=TM+1,                                 28204000 T  0000:0
STACK(F+37) = TM
STACK(F+40) = K
                        U=K+1,              SV=U+1,                                 28204200 T  0000:0
STACK(F+41) = U
STACK(F+42) = SV
                        UNITNO=SV+1;                                                28204400 T  0000:0
STACK(F+43) = UNITNO
                    ARRAY                                                           28204600 T  0000:0
                        H=UNITNO+1[*],      AROW=H+1[*],                            28204800 T  0000:0
STACK(F+44) = H
STACK(F+45) = AROW
                        IOD=AROW+1[*],      LAB=IOD+1[*],                           28205000 T  0000:0
STACK(F+46) = IOD
STACK(F+47) = LAB
                        LBL=LAB+1[*],       WRDSZ=LBL+1[*];                         28205200 T  0000:0
STACK(F+50) = LBL
STACK(F+51) = WRDSZ
                    ARRAY HDR=XX1[*];                                               28205400 T  0000:0
STACK(F+3) = HDR
                $ SET OMIT = NOT(B6500LOAD)                                         28205600 T  0000:0
                  DEFINE                                                            28206400 T  0000:0
                      DSED          = TERMSET(P1MIX)#,                            28206600 T  0000:0
                      SPOUTUNIT     = 0#,                                         28206800 T  0000:0
                      SPACER        = 5&@1400[CTF]#,                              28207000 T  0000:0
                      MM            = @37700040#,                                 28207200 T  0000:0
                      FINDTHETAPE   = LIBRARYHELP(1)#,                            28207400 T  0000:0
                      ABORT         = LIBRARYHELP(2)#,                            28207600 T  0000:0
                      SWITCHREELS   = LIBRARYHELP(11)#,                           28207650 T  0000:0
                      UNITNUM       = [1:5]#,                       %160-         28207700 C  0000:0
                      LATEST        = DA.[5:1]#,                                  28207800 T  0000:0
                      ADDV          = DA.[6:1]#,                                  28208000 T  0000:0
                      UNLOAD        = DA.[8:1]#,                                  28208200 T  0000:0
                      MUSTADD       = DA.[13:1]#,                   %160-         28208300 C  0000:0
                      BHS           = TOGS.[21:1]#,                               28208400 T  0000:0
                      FORKED        = TOGS.[23:1]#,                               28208600 T  0000:0
                      B6500         = TOGS.[24:1]#,                               28208800 T  0000:0
                      OE            = TOGS.[26:1]#,                               28209000 T  0000:0
                      SOMECOPIED    = TOGS.[28:1]#,                               28209100 T  0000:0
                      REELSW        = TOGS.[33:1]#,                               28209200 T  0000:0
                      SKIPDIR       = TOGS.[35:1]#,                               28209400 T  0000:0
                      SPACITSW      = TOGS.[36:1]#,                               28209600 T  0000:0
                      CHKLBL        = TOGS.[37:1]#,                               28209800 T  0000:0
                      COPYING       = TOGS.[38:1]#,                               28209900 T  0000:0
                      OUTAPEPARITY  = TOGS.[39:1]#,                               28210000 T  0000:0
                      SKIPFILE      = TOGS.[40:1]#,                               28210200 T  0000:0
                      NOLBL         = TOGS.[41:1]#,                               28210400 T  0000:0
```

```
     DUMPDIR        = TOGS.[42:1]#;                                                    28210600 T  0000:0
LABEL UP,BAC,WATE,LOOP,BACK,TTPF,BH,OK,WY,BADHDR,PRE;                                 28210800 T  0000:0
LABEL TRYNEXT,PARERR,HANDLERR,NEXT,SKIPPER,FALLOUT;                                   28211000 T  0000:0
%*********************************************************                            28211200 T  0000:0
DEFINE NOTCOPIED(NOTCOPIED1) =                                                        28211400 T  0000:0
     BEGIN NT3:=NOTCOPIED1; NOCOPYMESS; END#;                                         28211600 T  0000:0
SUBROUTINE NOCOPYMESS;                                                                28211800 T  0000:0
     LBMESS( ABS(MFID), FID, -67, NT3, TINU[IU], SPOUTUNIT, 1 );                      28212000 P  0001:0
%*********************************************************                            28212200 T  0004:1
%                                                                                     28212201 T  0004:1
% - READS BEGINNING LABEL AND TAPE MARK CHECKING FOR                                  28212202 T  0004:1
%   CORRECTNESS OF LIBRARY TAPE SOURCE                                                28212203 T  0004:1
%                                                                                     28212204 T  0004:1
%*********************************************************                            28212205 T  0004:1
%                                                                                     28212206 T  0004:1
BOOLEAN SUBROUTINE LABELCHECK;                                                        28212400 T  0004:1
BEGIN                                                                                 28212600 T  0005:0
TRYNEXT:                                                                              28212800 T  0005:0
     IF WAITIO(LABINX @120540000000,@40&@20[CTF],IU)=@40 AND                          28213000 T  0005:0
      NOT B6500 THEN       % PREMATURE EOT                                           28213200 T  0008:0
       BEGIN STREAM(T:=T:=SPACE(5));                                                  28213400 T  0009:1
             BEGIN DS:=16LIT". PREMATURE EOT←"; END;                                  28213600 T  0012:2
                                                                                                 28213600
             GO PRE;                                                                  28213800 T  0015:0
       END;                                                                           28214000 T  0017:0
                                                                                                 28213400
$ SET OMIT = NOT(B6500LOAD)                                                           28214600 T  0017:0
     IF @40≠WAITIO(SPACER,@40,IU) THEN                                                28216400 T  0017:0
        P(WAITIO(@4740000005,0,IU),DEL);                                              28216600 T  0019:1
     IF DSED THEN ABORT;                                                              28216800 T  0021:1
     IF (NOT B6500 AND ((NFLAG(LAB[0]),[6:42] EQV "LABEL  ")≠NOT 0                    28217000 T  0024:0
     OR (NFLAG(LAB[2]),[6:24] EQV "FILE")≠NOT 0))                                     28217200 T  0027:2
 $ SET OMIT = NOT(B6500LOAD)                                                          28217400 T  0031:0
     THEN BEGIN                                                                       28218200 T  0031:0
          STREAM(A:=[TINU[IU]],T:=T:=SPACE(10));                                      28218400 T  0031:3
          BEGIN SI:=A;SI:=SI+5;DS:=LIT".";DS:=3 CHR;                                  28218600 T  0035:0
               DS:=21 LIT" NOT A LIBRARY TAPE←";                                      28218800 T  0036:1
          END;                                                                        28219000 T  0039:1
                                                                                                 28218600
PRE:      SPOUT(T); T:=1;                                                             28219200 T  0039:2
          END ELSE T:=0;                                                              28219400 T  0041:2
                                                                                                 28218200
     IF T=0 AND NOT B6500 THEN                                                        28219600 T  0045:3
     IF NFLAG(LAB[2]),[30:18]=0 AND SKIPDIR THEN                                      28219800 T  0047:3
     BEGIN                                                                            28220000 T  0051:0
     SPACITSW:=1; CHKLBL:=FALSE;                                                      28220200 T  0051:2
     GO TO BACK; %BRANCH INTO SPACIT.                                                 28220400 T  0055:0
BAC:                                                                                  28220600 T  0055:2
     SPACITSW:=0; CHKLBL:=TRUE;                                                       28220800 T  0055:2
     GO TO TRYNEXT;                                                                   28221000 T  0059:0
     END;                                                                             28221200 T  0059:2
                                                                                                 28220000
     LABELCHECK:=T;                                                                   28221400 T  0059:2
END;                                                                                  28221600 T  0060:0
                                                                                                 28212600
%*********************************************************                            28221800 T  0060:1
%                                                                                     28221801 T  0060:1
```

```
                % - READS ENDING LABEL CHECKING TO SEE IF INPUT TAPE                                    28221802 T  0060:1
                %   REEL SWITCHING IS IN ORDER                                                          28221803 T  0060:1
                %                                                                                       28221804 T  0060:1
                %*************************************************************                          28221805 T  0060:1
                %                                                                                       28221806 T  0060:1
                BOOLEAN SUBROUTINE ENDOFREEL;                                                           28222000 T  0060:1
                BEGIN                                                                                   28222200 T  0061:0
                     BLASTQ(IU);                                                                        28222400 T  0061:0
                     IF P(WAITIO(LAB INX @120540000000,@2000040,IU),DUP)=@20 THEN                       28222600 T  0061:3
                     BEGIN % PAR ON ENDING LABEL:TEST FOR LAST FILE ON TAPE(EOF)                        28222800 T  0064:2
                          LAB[4]:=(*P(DUP))&(WAITIO(SPACER,@40,IU)=@40)[47:47:1];                       28223000 T  0065:0
                          P(WAITIO(5&@3400[CTF],@377,IU),DEL);                                          28223200 T  0069:2
                     END;                                                                               28223400 T  0071:2
                                                                                                                      28222800
$ SET OMIT = NOT(B6500LOAD)                                                                             28223600 T  0071:2
                     IF B6500 THEN P(DEL) ELSE NT1:=P;                                                  28225000 T  0071:2
                     IF DSED THEN ABORT;                                                                28225200 T  0077:2
                     IF ((NOT B6500) AND NFLAG(LAB[4]) AND NT1≠@40)                                     28225400 T  0080:1
$ SET OMIT = NOT(B6500LOAD)                                                                             28225600 T  0082:3
                     THEN BEGIN                                                                         28226200 T  0082:3
                          STOPTIMING(FPBPTR,1023);%                                                     28226400 T  0083:3
                          SETNOTINUSE(IU,0);                                                            28226600 T  0084:3
                          IREEL:=IREEL+1;                                                               28226800 T  0085:3
$ SET OMIT = NOT(B6500LOAD)                                                                             28227000 T  0087:0
                          NM2:=LAB[2];                                                                  28228200 T  0087:0
                          NM1:=LAB[1];                                                                  28228400 T  0088:0
                          FINDTHETAPE;                                                                  28228600 T  0089:0
                          ENDOFREEL:=TRUE;                                                              28228800 T  0089:3
                          END ELSE ENDOFREEL:=FALSE;                                                    28229000 T  0090:1
                                                                                                                      28226200
                END;      % OF SUBROUTINE ENDOFREEL                                                     28229200 T  0091:1
                                                                                                                      28222200
                %*************************************************************                          28229400 T  0091:2
                SUBROUTINE SPACIT;%                                                                     28229600 T  0091:2
                BEGIN                                                                                   28229800 T  0092:0
BACK:           WHILE WAITIO(SPACER,MM,IU)≠@40 DO                                                       28230000 T  0092:0
                BEGIN                                                                                   28230200 T  0094:3
                     IF DSED THEN ABORT;                                                                28230400 T  0094:3
                     IF STOPSET(PINIX) THEN STOPM(0);                                                   28230600 T  0097:2
                END;                                                                                    28230800 T  0100:1
                                                                                                                      28230200
                     IF ENDOFREEL AND NOT SPACITSW THEN GO BACK;                                        28231000 T  0102:0
                     IF SPACITSW THEN GO BAC; % BRANCH TO LABELCHECK ELSE EXIT                          28231200 T  0105:0
                END;                                                                                    28231400 T  0106:2
                                                                                                                      28229800
                %*********************************************************************                  28231600 T  0106:3
                SUBROUTINE WRITENDINGLABEL;                                                             28231800 T  0106:3
                BEGIN                                                                                   28232000 T  0107:0
                     P(WAITIO([TM],@40,OU),DEL);                                                        28232200 T  0107:0
                     P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                                              28232600 T  0108:2
                     IF DSED THEN ABORT;                                                                28232800 T  0110:3
                END; % OF WRITE ENDING LABEL                                                            28233000 T  0113:2
                                                                                                                      28232000
                %*************************************************************                          28233200 T  0115:0
                %                                                                                       28233201 T  0115:0
                % - HANDLES IO"S FOR DISK-TO-TAPE, TAPE-TO-DISK, OR TAPE-                               28233202 T  0115:0
                %   TO-TAPE TRANSFER INCLUDING B6500 TAPE SIZE ALTERATIONS                              28233203 T  0115:0
```

```
                %
                %*************************************************************
                %
                SUBROUTINE IO;
                BEGIN
                     SIZE:=IF (N-CNT) GTR 30 THEN 900 ELSE (N-CNT)x30;
                     IF U LSS 16
                      THEN
                      BEGIN
                      TMP:=@500000000;
                      IF IOD[W].[24:1]
                       THEN TMP:=TMP+B6500
                       ELSE BEGIN SIZE:=SIZE+B6500; WRDSZ[W]:=SIZE; END;

                      IOREQUEST(-(IOD[W]:=(AROW[W] INX TMP)&
                                SIZE[8:38:10]&
                                TINU[U][3:3:5]&
                                (NOT IOD[W])[24:24:1]) OR @2017700000,
                                IOD[W],
                                [IOD[W]]&U[12:42:6]);
                      END

                      ELSE
                      BEGIN
                      DISKIO(IOD[W],(AROW[W] INX B6500-1)&(NOT IOD[W])[1:24:1],
                            SIZE,Q+CNT);
$ SET OMIT = NOT(STATISTICS)
                      END;

                END;

                     END;

                     %*************************************************************
                     %
                     % - COPYS EACH ROW OF A FILE CHECKING FOR ERRORS, INCORRECT
                     %   RECORD SIZE IN TRANSFER, AND KEYIN REEL SWITCHING
                     %
                     %*************************************************************
                     %
                     SUBROUTINE COPYAROW;
                     BEGIN
                          N:=
                $ SET OMIT = NOT(B6500LOAD)
                          H[8];
                          Q:=H[K+9];
                          CNT:=W:=INC:=0; OUC:=-30;
                          IOD[0]:=IOD[1]:=IOMASK;
                          U:=IU;
                LOOP:
                          IO;
                WATE:
                          W:=1-W;
                          IF IOD[W] NEQ IOMASK THEN
                           COMPLEXSLEEP((((IOD[W]) AND IOMASK) NEQ 0) OR DSED);
28096800        ACCIDENTAL ENTRY AT 1
                          IF DSED THEN ABORT;
                          IF (Y:=IOD[W]).[27:2] NEQ 0
                           THEN BEGIN LIBRARYHELP(6);
```

```
28233204 T  0115:0
28233205 T  0115:0
28233206 T  0115:0
28233400 T  0115:0
28233600 T  0115:0
28233800 T  0115:0
28234000 T  0119:1
28234200 T  0119:2
28234400 T  0120:0
28234600 T  0120:2
28234800 T  0121:1
28235000 T  0121:2
28235200 T  0123:0
                  28235200
28235400 T  0129:0
28235600 T  0130:3
28235800 T  0131:3
28236000 T  0133:0
28236200 T  0135:3
28236400 T  0136:1
28236600 T  0138:0
                  28234400
28236800 T  0138:0
28237000 T  0138:0
28237200 T  0140:0
28237400 T  0145:0
28237600 T  0146:1
28238200 T  0146:1
                  28237000
28238400 T  0146:1
                  28233600
28238600 T  0146:2
28238601 T  0146:2
28238602 T  0146:2
28238603 T  0146:2
28238604 T  0146:2
28238605 T  0146:2
28238606 T  0146:2
28238800 T  0146:2
28239000 T  0147:0
28239200 T  0147:0
28239400 T  0147:0
28240000 T  0147:0
28240200 T  0148:0
28240400 T  0149:2
28240600 T  0152:1
28240800 T  0154:2
28241000 T  0155:1
28241200 T  0155:1
28241400 T  0156:0
28241600 T  0156:0
28241800 T  0157:1
28242000 T  0158:1

28242200 T  0166:1
28242400 T  0169:0
28242600 T  0170:2
```

```
                    IF OUTAPEPARITY OR SKIPFILE THEN GO HANDLERR;                    28242800 T  017:1
                END                                                                  28243000 T  017:3
                                                                                                 28242600
               ELSE IF (Y.[7:1] AND Y.[24:1])                                        28243200 T  017:3
                     THEN IF (M[AROW[W] INX NOT 0]) NEQ WRDSZ[W]                     28243400 T  017:0
                           THEN BEGIN LIBRARYHELP(10);                               28243600 T  017:3
                                      GO HANDLERR;                                   28243800 T  018:2
                                END ELSE ELSE                                        28244000 T  018:0
                                                                                                 28243600
              IF JAR[P1MIX,9].[1:1] % RC KEYIN                                       28244010 T  018:2
               THEN BEGIN                                                            28244020 T  018:3
                         JAR[P1MIX,9]:=(*P(DUP)) & 0[1:47:1];                        28244030 T  018:0
                         SWITCHREELS;                                                28244040 T  018:0
                    END;                                                             28244050 T  018:3
                                                                                                 28244020
              IF IOD[W].[24:1] % LAST THING DONE ON THIS BUFFER WAS READ              28244200 T  018:3
               THEN BEGIN U:=OU; CNT:=OUC:=OUC+30; GO LOOP; END;                     28244400 T  018:0
                                                                                                 28244400
              IF (CNT:=INC:=INC+30) LSS N % MORE READING NECESSARY                   28244600 T  019:1
               THEN BEGIN U:=IU; GO LOOP; END;                                       28244800 T  019:0
                                                                                                 28244800
              IF IOD[1-W] NEQ IOMASK                                                 28245000 T  019:1
               THEN BEGIN IOD[W]:=IOMASK; GO WATE; END;                              28245200 T  019:1
                                                                                                 28245200
HANDLERR:                                                                            28245400 T  020:0
    END;                                                                             28245600 T  020:0
                                                                                                 28239000
    %*************************************************************                  28245800 T  020:1
    P(MSCW,STF); RCW:=RCW&P(..LIBRARYTRANSFER,LOD)[CTC];                             28246000 T  020:1
    IF FASZ GTR 0 THEN LIBRARYHELP(5) ELSE  IU:=OU:=(FPBPTR:=0)-1; %134-             28246200 P  020:1
    FOR J:=0 STEP 1 UNTIL (FASZ DIV 2)-1 DO                                          28246400 T  020:0
    BEGIN                                                                            28246600 T  021:3
    COPYING:=FALSE;                                                                  28246700 T  021:3
    %                                                                                28246701 T  021:2
    %*****************************************                                      28246702 T  021:2
    %   FPB FIXUP UPON CHANGE OF INPUT SOURCE                                        28246703 T  021:2
    %*****************************************                                      28246704 T  021:2
    %                                                                                28246705 T  021:2
    IF DA.[CF] NEQ (TMP:=M[SV:=FAINFO+J].[CF]) THEN                                  28246800 T  021:2
     BEGIN IF IU NEQ (-1) THEN                                                       28247000 T  021:2
             BEGIN IF IU LSS 16 THEN SETNOTINUSE(IU,0);                              28247200 T  022:0
                   STOPTIMING(FPBPTR,1023);                                          28247400 T  022:3
             END;                                                                    28247600 T  022:3
                                                                                                 28247200
            IF FORKED THEN                                                           28247800 T  022:3
             BEGIN                                                                   28248000 T  022:2
             STARTIMING(FPBPTR:=5,TMP);                                              28248200 T  022:0
             IF TMP LSS 16 THEN                                                      28248400 T  022:2
              STREAM(MF:=MULTITABLE[TMP],F:=LABELTABLE[TMP],                         28248600 T  022:1
                     B:=PRT[P1MIX,3] INX 5);                                         28248800 T  023:0
              BEGIN SI:=LOC MF; DS:=16CHR;                                           28249000 T  023:3
              END                                                                    28249200 T  023:1
                                                                                                 28249000
                           ELSE                                                    28249400 T  023:1
              STREAM(B:=PRT[P1MIX,3] INX 5);                                         28249600 T  023:2
              BEGIN DS:=16LIT"ODIRCTRYODISK    "; END;                               28249800 T  023:0
                                                                                                 28249800
```

```
                RDCTABLE[TMP],[8:10]:=P1MIX;                                    28250000 T  0237:2
                END      ELSE                                                   28250200 T  0240:0
                                                                                            28248000
                WHILE (TEMP:=M[(NT1:=(PRT[P1MIX,3] INX (FPBPTR:=                28250400 T  0240:0
                      FPBPTR+5)))+3],[36:6]=1) NEQ TMP DO                       28250600 T  0241:2
                 IF M[NT1+4] LSS 0 THEN % NOT AREADY STOPPED                    28250800 T  0247:1
                 BEGIN IF TEMP LSS 16 THEN SETNOTINUSE(TEMP,0);                 28251000 T  0249:1
                      STOPTIMING(FPBPTR,1023);                                  28251200 T  0252:0
                 END;                                                           28251400 T  0253:0
                                                                                            28251000
               IU:=TMP; % AT THIS POINT IU CHANGES                              28251600 T  0253:2
               IF IU LSS 16 THEN                                                28251800 T  0254:1
               IREEL:=RDCTABLE[IU],[14:10]; % PICK UP REEL NO.                  28252000 T  0255:0
$ SET OMIT = NOT(B6500LOAD)                                                     28252200 T  0257:0
    END;                                                                        28252800 T  0257:0
                                                                                            28247000
   DA:=M[SV];                                                                   28253000 T  0257:0
   MFID:=M[FA+J*2]; FID:=M[FA+1+J*2];                                           28253200 T  0258:2
   SKIPFILE:=FALSE;                                                             28253400 T  0264:0
   IF IU=18                                                                     28253600 T  0265:3
    THEN BEGIN                                                                  28253800 T  0266:0
   %                                                                            28253801 T  0267:0
   %*******************************************                                 28253802 T  0267:0
   %   INPUT SOURCE DISK                                                        28253803 T  0267:0
   %*******************************************                                 28253804 T  0267:0
   %                                                                            28253805 T  0267:0
         DISKWAIT(-H,[CF],30,DA,[FF]);                                          28254000 T  0267:0
         IF DESTIN.UNITNUM = 19                                    %148-        28254200 P  0269:3
          THEN BEGIN                                                            28254400 T  0270:3
               ABORT;                                                           28254600 T  0271:2
               END                                                              28254800 T  0272:1
                                                                                            28254400
           ELSE BEGIN                                                           28255000 T  0272:1
    %                                                                           28255001 T  0272:3
    %*******************************************                                28255002 T  0272:3
    %   OUTPUT TO TAPE                                                          28255003 T  0272:3
    %*******************************************                                28255004 T  0272:3
    %                                                                           28255005 T  0272:3
TTPE:    STREAM(A:=J+1,B:=[LBL[2]]);                                            28255200 T  0272:3
         BEGIN S1:=LOC A;D1:=DI+5;DS:=3 DEC END;                                28255400 T  0274:2
                                                                                            28255400
         LABELTABLE[OU]:=-LBL[2]; % ENTER FILE ID FOR OL MESSAGE                28255600 T  0275:2
         H[9]:=(*P(DUP)) AND 31;                                                28255800 T  0277:1
         IF NOLBL THEN NOLBL:=FALSE ELSE                                        28256000 T  0279:1
         BEGIN                                                                  28256200 T  0282:1
         P(WAITIO(LBL&@5000[CTF],@40,OU),DEL);                                  28256400 T  0282:3
         P(WAITIO([TM],@40,OU),DEL);                                            28256800 T  0285:0
         END;                                                                   28257200 T  0286:2
                                                                                            28256200
         IF BHS OR (P([H[9]],LOD,DUP)=0 OR P(XCH) GTR 20)                       28257400 T  0286:2
          THEN BEGIN                                                            28257600 T  0289:1
BADHDR:        LIBRARYHELP(9);                                                  28257800 T  0290:2
               GO NEXT;                                                         28258000 T  0291:1
               END;                                                             28258200 T  0293:0
                                                                                            28257600
         P(WAITIO(H&@5000[CIF],@40,OU),DEL);                                    28258400 T  0293:0
UP:      COPYING:=TRUE;                                                         28258600 T  0295:1
```

```
            IF DSED THEN ABORT;                                                                 28258700 T  0297:0
            FOR K:=1 STEP 1 UNTIL H[9].[43:5] DO% WRITE OUT FILE                                28258800 T  0299:3
            IF H[K+9]≠0 THEN                                                                    28259000 T  0304:1
            BEGIN                                                                               28259200 T  0305:3
               COPYAROW;                                                                        28259400 T  0306:1
               IF OUTAPEPARITY THEN                                                             28259600 T  0307:0
               BEGIN                                                                            28259800 T  0307:3
                  OUTAPEPARITY:=FALSE;                                                          28260000 T  0308:1
                  GO UP;                                                                        28260200 T  0310:0
               END;                                                                             28260400 T  0312:0
                                                                                                            28259800
               IF SKIPFILE THEN GO NEXT;                                                        28260600 T  0312:0
               IF STOPSET(P1MIX) THEN STOPM(0);                                                 28260800 T  0313:2
            END;                                                                                28261000 T  0316:1
                                                                                                            28259200
            COPYING:=FALSE;                                                                     28261100 T  0316:3
            IF OU LSS 16 THEN WRITENDINGLABEL;                                                  28261200 T  0318:2
            IF IU LSS 16 THEN                                                                   28261400 T  0321:0
$ SET OMIT = NOT B6500LOAD                                                                      28261600 T  0321:3
            IF WAITIO(SPACER,MM,IU) NEQ @40 THEN                                                28262200 T  0321:3
             BEGIN NOTCOPIED(56); LIBRARYHELP(8); GO NEXT; END;                                 28262400 T  0324:2
                                                                                                            28262400
                                                                                                            28262400
$ SET OMIT = PACKETS                                                                            28262600 T  0330:0
             BEGIN                                                                              28263200 T  0330:0
             STREAM(MFID,FID,A:=TINU[IU],B:=TINU[OU],T:=T:=SPACE(10));                          28263400 T  0330:0
             BEGIN SI:=LOC MFID; SI:=SI+1; DS:=7CHR; DS:=LIT"/";                                28263600 T  0334:1
                   SI:=SI+1; DS:=7CHR; DS:=13LIT" COPIED FROM ";                                28263800 T  0335:2
                   SI:=SI+5; DS:=3CHR; DS:=4LIT" TO "; SI:=SI+5;                                28264000 T  0338:0
                   DS:=3CHR; DS:=LIT".";                                                        28264200 T  0339:2
             END;                                                                               28264400 T  0340:1
                                                                                                            28263600
             SPOUTFR(T,0,LIBMSG);                                                               28264600 T  0340:2
             END;                                                                               28264800 T  0342:1
                                                                                                            28263200
            SOMECOPIED:=TRUE;                                                                   28264900 T  0342:1
            IF IU=18 THEN                                                                       28265000 T  0344:0
             BEGIN P(DIRECTORYSEARCH(-(DA.[FF]),13,20),DEL);                                    28265200 T  0344:3
                   M[FAINFO+J].[17:1]:=1;                                                       28265400 T  0347:2
             END;                                                                               28266000 T  0350:3
                                                                                                            28265200
            IF OU=18 THEN                                                                       28266200 T  0350:3
             BEGIN P(DIRECTORYSEARCH(-MFID,FID,14),DEL); OE:=0; END;                            28266400 T  0351:2
                                                                                                            28266400
            IF DUMPDIR THEN                                                                     28266600 T  0355:2
             BEGIN LIBRARYHELP(7);                                                              28266800 T  0356:1
                   IF (Y:=IOD[W]).[27:2] NEQ 0 THEN                                             28267000 T  0357:2
                    IF Y.[28:1] THEN                                                            28267200 T  0359:2
                     BEGIN STREAM(T:=T:=SPACE(7));                                              28267400 T  0360:3
                        BEGIN DS:=31LIT"PARITY WHILE WRITING DIRECTORY.";                       28267600 T  0364:0
                        END;                                                                    28267800 T  0368:1
                                                                                                            28267600
                           SPOUT(T); ABORT;                                                     28268000 T  0368:2
                     END        ELSE                                                          28268200 T  0370:2
                                                                                                            28267400
                     LIBRARYHELP(6);                                                            28268400 T  0370:2
                   IF NOT IOD[W].[27:1] THEN                                                    28268600 T  0371:3
```

```
                BEGIN WRITENDINGLABEL; DUMPDIR:=0; END ELSE NOLBL:=1;                28268800 T  0373:0
                                                                                                 28268800
          END;                                                                       28269000 T  0379:0
                                                                                                 28266800
          IF IU LSS 16 THEN                                                          28269400 T  0379:0
$ SET OMIT = NOT B6500LOAD                                                           28269600 T  0379:3
          GO FALLOUT;                                                                28270200 T  0379:3
          END;                                                                       28270400 T  0380:1
                                                                                                 28255000
      END                                                                            28270600 T  0380:1
                                                                                                 28253800
     ELSE BEGIN       % SOURCE TAPE                                                  28270800 T  0380:1
    %                                                                                28270801 T  0380:3
    %*********************************************                                   28270802 T  0380:3
    %   INPUT SOURCE TAPE                                                            28270803 T  0380:3
    %*********************************************                                   28270804 T  0380:3
    %                                                                                28270805 T  0380:3
    %*********************************************                %160-             28270806 C  0380:3
    %   CHECK IF FILE IS TO BE ADDED                             %160-             28270807 C  0380:3
    %*********************************************                %160-             28270808 C  0380:3
    %                                                            %160-             28270809 C  0380:3
          IF ADDV THEN                                           %160-             28270810 C  0380:3
          IF NOT MUSTADD THEN                                    %160-             28270812 C  0381:2
          IF DESTIN.UNITNUM = 19 THEN% TAPE TO DISK              %160-             28270814 C  0383:0
          IF DIRECTORYSEARCH(-MFID,FID,5) NEQ 0% ALREADY ON DISK %160-             28270816 C  0384:3
           THEN BEGIN                                            %160-             28270818 C  0387:0
                LBMESS(ABS(MFID),FID,-67,68,TINU[IU],SPOUTUNIT,LIBMSG);             28270820 C  0387:3
                IF STOPSET(P1MIX) THEN STOPM(0);                 %160-             28270822 C  0391:1
                IF DSED THEN ABORT;                              %160-             28270824 C  0394:0
                GO NEXT;                                         %160-             28270826 C  0396:3
                END                                              %160-             28270828 C  0397:1
                                                                                                 28270818
           ELSE BEGIN M[FAINFO+J],[13:1]:=1; MUSTADD:=1 END;     %160-             28270830 C  0397:1
                                                                                                 28270830
          IF LABELCHECK THEN ABORT;                                                  28271000 T  0402:3
$ SET OMIT = NOT(B6500LOAD)                                                          28271200 T  0405:1
    %                                                                                28272201 T  0405:1
    %*********************************************                                   28272202 T  0405:1
    %   POSITION THE TAPE TO CORRECT FILE                                            28272203 T  0405:1
    %   USING INFO. IN "FAINFO" ENTRY (DA)                                           28272204 T  0405:1
    %*********************************************                                   28272205 T  0405:1
    %                                                                                28272206 T  0405:1
          STREAM(B:=LAB[2],SV:=[SV]);                                                28272400 T  0405:1
           BEGIN S1:=LOC B; S1:=S1+5; DS:=30CT; END;                                 28272600 T  0406:2
                                                                                                 28272600
          IF SV NEQ DA.[FF] THEN BEGIN J:=J-1; GO SKIPPER; END;                      28272800 T  0407:2
                                                                                                 28272800
          IF WAITIO((*[AROW[0]])&@5400[CTF],@2000000,IU)=@20                         28273000 T  0411:0
           THEN BEGIN P(1); GO BH; END; % RD HDR CHKING FOR PARITY                   28273200 T  0413:2
                                                                                                 28273200
          MOVE(30+5*B6500,AROW[0].[CF]+B6500,H);                                     28273400 T  0417:0
$ SET OMIT = NOT B6500LOAD                                                           28273600 T  0422:0
          T:=-1;                                                                     28275800 T  0422:0
          IF (NOT B6500) AND (M[AROW[0] INX NOT 0] NEQ 30)                           28276000 T  0423:0
           THEN P(1)                                                                 28276200 T  0426:1
           ELSE                                                                      28276400 T  0427:2
           BEGIN STREAM(A:=0:D:=H);                                                  28276600 T  0427:2
```

```
                    BEGIN SI:=D; 30(IF SB THEN BEGIN TALLY:=1; JUMP OUT END                28276800 T  0429:2
                                          ELSE SI:=SI+8); A:=TALLY;                        28277000 T  0430:3
                                                                                                       28276800
                    END;                                                                   28277200 T  0432:1
                                                                                                       28276800
               IF P THEN P(1)                                                              28277400 T  0432:2
                    ELSE IF (NT1:=H[9].[43:5]) GTR 20 OR NT1=0                            28277600 T  0433:1
                         THEN P(1)                                                        28277800 T  0436:0
                         ELSE                                                             28278000 T  0437:2
                         BEGIN SV:=0;                                                     28278200 T  0437:2
                         FOR W:=10 STEP 1 UNTIL 29 DO                                     28278400 T  0438:3
                          BEGIN SV:=SV+(NT2:=(H[W] NEQ 0));                               28278600 T  0440:0
                                IF W GEQ NT1+10 THEN IF NT2 THEN W:=31;                   28278800 T  0442:2
                          END;                                                            28279000 T  0445:3
                                                                                                       28278600
                         IF ((W=31) OR (SV GTR NT1) OR ((SV NEQ 0) AND                    28279200 T  0448:0
                            (H[8]=0)))                                                    28279400 T  0450:2
                          THEN P(1)                                                       28279600 T  0451:3
                          ELSE P(0);                                                      28279800 T  0452:3
                         END;                                                             28280000 T  0453:2
                                                                                                       28278200
               END;                                                                        28280200 T  0453:2
                                                                                                       28276600
BH:       BHS:=P(XCH);                                                                     28280400 T  0453:2
          IF BHS THEN                                                                      28280600 T  0455:1
           IF DESTIN.UNITNUM = 19 THEN GO BADHDR ELSE GO TTPE;          %148-             28280800 P  0456:0
          IF DESTIN.UNITNUM = 19                                        %148-             28281000 P  0458:3
           THEN                                                                            28281200 T  0459:3
           BEGIN       % TAPE TO DISK (LOAD)                                               28281400 T  0460:0
%                                                                                          28281401 T  0460:2
%*****************************************                                                28281402 T  0460:2
%   OUTPUT TO DISK                                                                         28281403 T  0460:2
%*****************************************                                                28281404 T  0460:2
%                                                                                          28281405 T  0460:2
           IF MUSTADD THEN T:=0 ELSE% ADD FILE NOT ON DISK              %160-             28281550 C  0460:2
           IF (T:=DIRECTORYSEARCH(MFID&(3+4*(ADDV))[1:45:3],                              28281600 T  0462:2
                FID,4+ADDV)) GEQ 2                                                        28281800 T  0466:0
            THEN                                                                          28282000 T  0468:1
            IF T=2 THEN NOTCOPIED(25)                                                     28282200 T  0468:3
                   ELSE BEGIN                                                             28282400 T  0470:0
                                                                                                       28282400
                    IF (SV:=NOT ADDV AND M[T+2] NEQ 0 AND                                 28282600 T  0472:2
                     ((USERCODE[P1MIX] EQV ABS(MCP)) NEQ NOT 0) AND                       28282800 T  0475:3
                     ((USERCODE[P1MIX] EQV ABS(M[T+2])) NEQ NOT 0)) OR                    28283000 T  0478:3
                     (LATEST AND M[T+3].[30:18] GTR H[3].[30:18]) THEN                    28283200 T  0482:3
                     BEGIN                                                                28283400 T  0487:1
                     HEADERUNLOCK(ABS(MFID),FID,T);                                       28283600 T  0487:3
                     T:=-1;                                                               28283800 T  0489:3
                     NOTCOPIED(64-SV*23);                                                 28284000 T  0490:3
                                                                                                       28284000
                     END;                                                                 28284200 T  0494:0
                                                                                                       28283400
                        END                                                               28284400 T  0494:0
                                                                                                       28282400
            ELSE                                                                          28284600 T  0494:0
            IF T=1 THEN % IT WAS "IF-ED"                                                  28284800 T  0494:0
             BEGIN T:=-1;                                                                 28285000 T  0495:1
```

```
                NOTCOPIED(45);                                                  28285200 T  0496:3
                                                                                        28285200
          END   ELSE IF DSED THEN ABORT;                                        28285400 T  0499:0
                                                                                        28285000
        OE:=(T GEQ 64);                                                         28285600 T  0502:1
        IF T=0 OR (T GEQ 64 AND NOT ADDV) THEN                                  28285800 T  0504:2
        BEGIN  %  LOAD IT                                                       28286000 T  0507:2
            IF T GEQ 64 THEN                                                    28286200 T  0508:0
            IF M[T+8]≠H[8] THEN                                                 28286400 T  0508:3
            BEGIN                                                               28286600 T  0511:2
                FORGETSPACE(T);                                                 28286800 T  0512:0
                P(DIRECTORYSEARCH(MFID,FID,6),DEL);                             28287000 T  0512:3
                T:=0;                                                           28287200 T  0514:1
            END;                                                                28287400 T  0515:0
                                                                                        28286600
            IF T=0 THEN                                                         28287600 T  0515:0
            BEGIN                                                               28287800 T  0515:3
                T:=GETSPACE(30,DISKHEADERAREAV,1)+2;%           %167-           28288000 P  0516:1
                MOVE(30,T-1,T);                                                 28288200 T  0518:2
                M[T+4]:=-0&SYSNO[4:46:2]&1[2:47:1];                             28288400 T  0520:2
            END ELSE                                                            28288600 T  0524:3
                                                                                        28287800
            TMP:=T.[18:15];                                                     28288800 T  0524:3
            HDR :=  [M[T]] & 30[8:38:10];                                       28289000 T  0526:2
            FOR W:=H[9].[43:5]+10 STEP 1 UNTIL 29 DO H[W]:=0;                   28289200 T  0528:3
            IF (HDR[9]:=(*P(DUP)) AND 31) = 0 THEN HDR[7]:=-1;                  28289400 T  0535:2
            FOR W:=HDR[9]+10 STEP 1 UNTIL 29 DO HDR[W]:=0;                      28289600 T  0540:0
            W:=0;                                                               28289800 T  0546:1
            WHILE (W:=W+1) LEQ H[9].[43:5] DO                                   28290000 T  0547:0
            IF H[9+W]≠0 THEN                                                    28290200 T  0550:0
             IF (H[9+W]:=HDR[9+W]) LEQ 0 THEN                                   28290400 T  0551:2
OK:              IF(H[9+W]:=PETUSERDISK(H[8] OR M,COMMON)) LSS 1 THEN           28290600 T  0555:0
                 BEGIN                                                          28290800 T  0559:1
WY:              TEMP:=SPACE(10);                                               28291000 T  0559:3
                 STREAM(J:=JARROW[P1MIX],P1MIX,H:=H[8],M:=MFID,F:=FID,          28291200 T  0562:0
                       TEMP);                                                   28291400 T  0563:3
                 BEGIN DS:=14 LIT "#NO USER DISK:"; SI:=J;SI:=SI+1;             28291600 T  0564:2
                 DS:=7CHR;DS:=LIT"/";SI:=SI+1;DS:=7CHR;DS:=LIT"=";              28291800 T  0567:0
                 SI:=LOC P1MIX;DS:=2DEC;J:=DI;DI:=DI-2;DS:=FILL;DI:=J;          28292000 T  0568:3
                 DS:=LIT"(";SI:=LOC M;SI:=SI+1;DS:=7CHR;SI:=SI+1;               28292200 T  0570:1
                 DS:=LIT"/";DS:=7CHR;DS:=2LIT")=";SI:=LOC H;DS:=8 DEC;          28292400 T  0571:3
                 DS:=7LIT" SEGS.←"; DI:=DI-15; DS:=7FILL;                       28292600 T  0573:2
                 END;                                                           28292800 T  0575:1
                                                                                        28291600
                 SPOUT(TEMP);                                                   28293000 T  0575:2
                 REPLY[P1MIX] := -(TEMP:=VIF&VWY[36:42:6]&                      28293200 T  0576:3
                      VOF[30:42:6]&VOK[24:42:6]);                               28293400 T  0578:2
                 COMPLEXSLEEP(REPLY[P1MIX]≥0 OR DSED                            28293600 T  0581:3
                              OR PRT[P1MIX,@25]=5);                             28293800 T  0581:3
28242000    ACCIDENTAL ENTRY AT 5
                 IF NOT WHYSLEEP(TEMP) THEN GO TO WY;                           28294000 T  0590:2
                 IF REPLY[P1MIX]=VOK THEN GO TO OK;                             28294200 T  0591:3
                 IF  REPLY[P1MIX]=VOF THEN                                      28294400 T  0593:1
                 BEGIN COMMON := COMMON AND NOT M; GO TO OK; END;               28294600 T  0594:1
                                                                                        28294600
                 FOR W:=W STEP -1 UNTIL 1 DO                                    28294800 T  0596:3
                      IF H[9+W]≠0 THEN                                          28295000 T  0598:0
```

```
          IF HDR[9+W]=0 THEN                                                    28295200 T  0599:2
               FORGETUSERDISK(H[9+W],-H[8]);                                    28295400 T  0601:2
     FORGETSPACE(T);                                                            28295600 T  0606:2
     IF DSED THEN ABORT;                                                        28295800 T  0607:1
     IF HDR[9]≠0 THEN                                                           28296000 T  0610:0
     BEGIN                                                                      28296200 T  0611:0
          P(DIRECTORYSEARCH(MFID,FID,14),DEL);                                  28296400 T  0611:2
          OE:=0;                                                                28296600 T  0613:0
     END;                                                                       28296800 T  0614:3
                                                                                              28296200
     NOTCOPIED(31);                                                             28297000 T  0614:3
                                                                                              28297000
     IF J NEQ ((FASZ DIV 2)-1) THEN SPACIT;                                     28297200 T  0617:0
     GO NEXT;                                                                   28297400 T  0620:0
     END;                                                                       28297600 T  0620:2
                                                                                              28290800
STREAM(A:=[H[1]],D:=DATE);                                                      28297800 T  0621:0
BEGIN S1:=LOC D;D1:=LOC D;DS:=8 OCT;                                            28298000 T  0622:1
     S1:=S1-4;D1:=A;DS:=4 CHR;                                                  28298200 T  0623:0
END;                                                                            28298400 T  0623:3
                                                                                              28298000
H[4]:=M[T+4]&H[4][8:8:3]&0[11:47:1]&H[4][36:36:6]                               28298600 T  0624:0
      &H[4][43:43:1];                                                           28298800 T  0628:3
H[1].[25:23]:=XCLOCK+P(RTR);                                                    28299000 T  0631:1
IF HDR[9]=0 THEN                                                                28299200 T  0634:1
     ENTERUSERFILE(ABS(MFID),FID,H,[CF]-1)                                      28299400 T  0635:1
ELSE                                                                            28299600 T  0635:1
BEGIN W:=IF H[9] LSS HDR[9] THEN HDR[9] ELSE H[9];                              28299800 T  0638:3
     FOR W:=W+9 STEP -1 UNTIL 10 DO                                             28300000 T  0643:0
     IF H[W]=0 THEN                                                             28300200 T  0647:1
       IF HDR[W]≠0 THEN       % EXTRA ROW IN DISK FILE                         28300400 T  0648:1
         FORGETUSERDISK(HDR[W],HDR[8]) ELSE ELSE                                28300600 T  0649:3
$ SET OMIT = NOT SHAREDISK                                                      28300800 T  0652:1
          ;DISKWAIT(H INX 0,30,TMP);                                            28301600 T  0652:1
     END;                                                                       28301800 T  0655:1
                                                                                              28299800
     FORGETSPACE(T);                                                            28302000 T  0655:1
    GO UP;                                                                      28302200 T  0656:0
  END % OF LOAD IT                                                              28302400 T  0658:0
                                                                                              28286000
  ELSE IF J=((FASZ DIV 2)-1) THEN GO NEXT ELSE GO SKIPPER;                      28302600 T  0658:0
  END % OF TAPE TO DISK                                                         28302800 T  0661:1
                                                                                              28281400
  ELSE GO TTPE;                                                                 28303000 T  0661:1
SKIPPER; DO UNTIL WAITIO(SPACER,MM,IU)=#40 OR DSED;                             28303200 T  0661:1
  IF STOPSET(P1MIX) THEN STOPM(0);                                              28303400 T  0665:3
  IF DSED THEN ABORT;                                                           28303600 T  0668:2
FALLOUT; IF ENDOFREEL THEN GO SKIPPER;                                          28303800 T  0671:1
  END;                                                                          28304000 T  0673:3
                                                                                              28270800
NEXT:                                                                           28304200 T  0674:0
    END;                                                                        28304400 T  0674:0
                                                                                              28246600
    IF NOT SOMECOPIED THEN                                                      28304500 T  0677:0
     BEGIN STREAM(T:=T:=SPACE(5));                                              28304510 T  0678:0
           BEGIN DS:=18LIT"NULL LIBRARY COPY←"; END;                            28304520 T  0681:1
                                                                                              28304520
```

```
        SPOUT(T);                                                                28304530 T  0684:0
    END;                                                                         28304540 T  0685:1
                                                                                             28304510
    IF OU GEQ 0 THEN % WE HAVE AN OUTPUT UNIT                          %130-     28304590 C  0685:1
    IF (DESTIN.UNITNUM#19) THEN P(WAITIO([TM],@40,OU),DEL);            %148-     28304600 P  0686:0
    IF IU GEQ 0 THEN % WE HAVE AN INPUT  UNIT                          %130-     28304700 C  0689:3
    IF IU LSS 16 THEN SETNOTINUSE(IU,0);                                         28304800 T  0690:2
    IF FORKED                                                                    28305000 T  0693:1
     THEN STOPTIMING(FPBPTR,1023)                                                28305200 T  0693:1
     ELSE FOR TMP:=FPBPTR STEP 5 UNTIL (NT1:=PRT[P1MIX,3]).[8:10]=5 DO           28305400 T  0695:1
          IF M[NT1 INX (TMP+4)] LSS 0 THEN                                       28305600 T  0702:0
           BEGIN IF (TEMP:=M[NT1 INX (TMP+3)].[36:6]=1) LSS 16 THEN              28305800 T  0704:2
            SETNOTINUSE(TEMP,0);                                                 28306000 T  0709:0
            STOPTIMING(TMP,1023);                                                28306200 T  0710:2
           END;                                                                  28306400 T  0711:2
                                                                                             28305800
    IF OU GEQ 0 THEN % WE HAVE AN OUTPUT UNIT                          %130-     28306500 C  0712:0
    IF OU LSS 16 THEN SETNOTINUSE(OU,1);                                         28306600 T  0712:3
    STOPTIMING(0,1023);                                                          28306800 T  0715:2
$ SET OMIT = PACKETS                                                             28307000 T  0716:2
    TMP:=FASZ DIV 2 - 1;                                               %757-     28307700 C  0716:2
    FOR J:=0 STEP 1 UNTIL TMP DO                                       %757-     28307705 C  0718:1
     IF (DA:=M[FAINFO+J]).[CF]=18 THEN % FROM DISK                     %757-     28307710 C  0719:0
      IF UNLOAD THEN                                                   %757-     28307715 C  0722:0
       BEGIN MFID:=M[FA+J*2]; FID:=M[FA+1+J*2];                        %757-     28307720 C  0723:1
             P(DIRECTORYSEARCH(-MFID&1[3:47:1],FID,7),DEL);            %757-     28307725 C  0729:1
             IF DSED THEN GO TO INITIATE;                              %757-     28307730 C  0732:0
       END;                                                            %757-     28307735 C  0734:2
                                                                                             28307720
    GO INITIATE;                                                                 28307800 T  0736:3
END OF LIBRARYTRANSFER;                                                          28308000 T  0737:1
                                                                                             28200200
                                                                                 SIZE= 0738 WORDS
```

```
PROCEDURE LIBRARYCOPY;                                                  START OF REL SEGMENT; DISK ADDRESS = 00809
%
%*********************************************************************
%
%
%   LIBRARYCOPY PERFORMS THE INITIAL SETUP OF FILE NAMES AND
%   INFORMATION BASED ON DATA PASSED THROUGH FSPDISK FROM THE
%   PROCEDURE CCLIB.  THIS INFORMATION WILL BE PLACED IN THE
%   FILE ARRAY "FA" AND ITS COUNTERPART "FAINFO" FOR USE LATER
%   IN LIBRARYTRANSFER.  IT OPERATES ON EACH <COPY SPECIFICATION>
%   (REFER TO BNF DOCUMENTATION) ONE AT A TIME UNTIL THE CONTROL
%   CARD HAS BEEN EXHAUSTED.
%
%   THERE ARE TWO METHODS OF FINDING FILES ON A DISK INPUT SOURCE.
%   ONE IS TO USE IT AS IF IT WERE A LARGE TAPE, USING THE DISK
%   DIRECTORY LIKE A LARGE TAPE DIRECTORY (NOHASH); THE OTHER IS
%   TO USE THE PROCEDURE SEEKNAM TO OBTAIN NAMES VIA A HASHING
%   TECHNIQUE.  IRREGARDLESS OF THE NAME FINDING METHOD, ONCE YOU
%   HAVE A NAME PAIR THE PROCEDURE FOLLOWED IS THE SAME:
%
%   1:  DETERMINE IF NAME PAIR HAS BEEN ASKED FOR BY CONTROL CARD
%
%   2:  CHECK TO SEE IF IT APPEARS IN THE "EXCEPT" LIST FOR THAT
%       NAME PAIR
%
%   3:  IF DISK, MAKE SURE IT IS ACCESSABLE
%
%   4:  CHANGE NAME IF SPECIFIED BY "AS" CLAUSE
%
%   5:  CHECK THAT NAME PAIR HAS NOT ALREADY BEEN PROCESSED
%
%   6:  INSERT NAME PAIR INTO "FA"
%       INSERT NAME PAIR INFORMATION INTO "FAINFO"
%
%   AT STEP 6, IT MUST BE DETERMINED AS TO WHETHER THE USER
%   SPECIFIED MAXIMUM NUMBER OF FILES PER OUTPUT UNIT HAS BEEN
%   EXCEEDED.  IF SO, AN ATTEMPT TO FORK ANOTHER LIBMAIN/DISK TO
%   HANDLE THE CURRENT "FA" WILL BE INITIATED (REFER TO DOCUMENTATION),
%   AND THE PROCESS WILL CONTINUE WITH A NEW "FA".  A LINKED LIST
%   OF "FA"S IS KEPT BY THE ORIGINATING LIBMAIN/DISK FOR THE
%   CONFLICT RESOLUTION OF STEP 5.
%
%
%   COMMON.[2:1]    INDICATES ORIGINATING LIBMAIN/DISK
%
% IF ORIGINATOR...
%
%         .[3:6]    UNITNO FOR PACKETS
%         .[9:9]    MAXIMUM NUMBER OF FILES PER OUTPUT UNIT
%         .[CF]     FIRST ESPDISK SEGMENT ADDRESS
%
% IF NOT ORIGINATOR...
%
%         .[3:45]   DISK ADDRESS OF "FA" AND "FAINFO" FOR THIS
%                   FORKED LIBMAIN/DISK
%
```

```
28400000 T  0000:0
28400002 T  0000:0
28400004 T  0000:0
28400006 T  0000:0
28400008 T  0000:0
28400010 T  0000:0
28400012 T  0000:0
28400014 T  0000:0
28400016 T  0000:0
28400018 T  0000:0
28400020 T  0000:0
28400022 T  0000:0
28400024 T  0000:0
28400026 T  0000:0
28400028 T  0000:0
28400030 T  0000:0
28400032 T  0000:0
28400034 T  0000:0
28400036 T  0000:0
28400038 T  0000:0
28400040 T  0000:0
28400042 T  0000:0
28400044 T  0000:0
28400046 T  0000:0
28400048 T  0000:0
28400050 T  0000:0
28400052 T  0000:0
28400054 T  0000:0
28400056 T  0000:0
28400058 T  0000:0
28400060 T  0000:0
28400062 T  0000:0
28400064 T  0000:0
28400066 T  0000:0
28400068 T  0000:0
28400070 T  0000:0
28400072 T  0000:0
28400074 T  0000:0
28400076 T  0000:0
28400078 T  0000:0
28400080 T  0000:0
28400082 T  0000:0
28400084 T  0000:0
28400086 T  0000:0
28400088 T  0000:0
28400090 T  0000:0
28400092 T  0000:0
28400094 T  0000:0
28400096 T  0000:0
28400098 T  0000:0
28400100 T  0000:0
28400102 T  0000:0
28400104 T  0000:0
28400106 T  0000:0
28400108 T  0000:0
28400110 T  0000:0
```

```
%   FA              FILE ARRAY FOR NAME PAIRS                                   28400112 T  0000:0
%                                                                               28400114 T  0000:0
%   FAINFO          TRANSFER INFORMATION FOR ASSOCIATED NAME PAIR               28400116 T  0000:0
%                                                                               28400118 T  0000:0
%   FAIN            INDEX INTO "FA"                                             28400120 T  0000:0
%                                                                               28400122 T  0000:0
%   FASZ            SIZE OF "FA"                                                28400124 T  0000:0
%                                                                               28400126 T  0000:0
%   MFID            MULTI-FILE ID                                               28400128 T  0000:0
%                                                                               28400130 T  0000:0
%   FID             FILE ID                                                     28400132 T  0000:0
%                                                                               28400134 T  0000:0
%   ASMFID          MULTI-FILE ID AFTER STEP 4.                                 28400136 T  0000:0
%                                                                               28400138 T  0000:0
%   ASFID           FILE ID AFTER STEP 4.                                       28400140 T  0000:0
%                                                                               28400142 T  0000:0
%   FPBPTR          CURRENT INDEX OF FPB ENTRY                                  28400144 T  0000:0
%                                                                               28400146 T  0000:0
%   DESTIN          USER SPECIFIED DESTINATION                                  28400148 T  0000:0
%                                                                               28400150 T  0000:0
%   TOGS.[3:1] (ACCESSD)    SPECIFIES CHECK ACCESSD BIT                         28400152 T  0000:0
%        .[4:1] (EXPIRED)   CHECK FOR FILE BEING EXPIRED                        28400154 T  0000:0
%        .[7:1] (NOHASH)    USE DISK SERIALLY                                   28400156 T  0000:0
%        .[18:1] (OK)       FILE HAS PASSED STAGE 3.                            28400158 T  0000:0
%        .[19:1] (INXLST)   FILE OCCURRED IN "EXCEPT" LIST                      28400160 T  0000:0
%        .[20:1] (WEIRDFORK) SOME ALTERATIONS TO "FA" ARE                       28400162 T  0000:0
%                            NECESSARY BEFORE FORKING                           28400164 T  0000:0
%        .[23:1] (FORKED)   NOT ORIGINATING LIBRARYCOPY                         28400166 T  0000:0
%        .[25:1] (SOURCEFILEFOUND) AT LEAST ONE FILE FROM THIS                  28400168 T  0000:0
%                                  SOURCE WAS USED                              28400170 T  0000:0
%                                                                               28400172 T  0000:0
%   CCA             HOLDS ESPDISK SEGMENTS FROM CCLIB                           28400174 T  0000:0
%                                                                               28400176 T  0000:0
%   NA,                                                                         28400178 T  0000:0
%   EA,                                                                         28400180 T  0000:0
%   POOL            USED IN PREPROCESSING CONTROL CARD INFO, FROM               28400182 T  0000:0
%                   CCLIB FOR USE BY LIBRARYCOPY                                28400184 T  0000:0
%                                                                               28400186 T  0000:0
%   MAX             USER SPECIFIED MAXIMUM NUMBER OF FILES PER                  28400188 T  0000:0
%                   OUTPUT UNIT                                                 28400190 T  0000:0
%                                                                               28400192 T  0000:0
%   X               DIRECTORY OF CURRENT SOURCE (TAPE OR NOHASH)                28400194 T  0000:0
%                                                                               28400196 T  0000:0
%                                                                               28400198 T  0000:0
%*************************************************************************     28400200 T  0000:0
%                                                                               28400202 T  0000:0
BEGIN                                                                           28400300 T  0000:0
    REAL COMMON=-4,                                                             28400400 T  0000:0
STACK(F-4) = COMMON
        MFID,FID,ASMFID,ASFID,TMP,TEMP, % ADD NEW LOCALS BEYOND HERE            28400600 T  0000:0
STACK(F+1) = MFID
STACK(F+2) = FID
STACK(F+3) = ASMFID
STACK(F+4) = ASFID
STACK(F+5) = TMP
STACK(F+6) = TEMP
        FA,FAINFO,FASZ,FAIN,                                                    28400800 T  0000:0
```

```
STACK(F+7) = FA
STACK(F+10) = FAINFO
STACK(F+11) = FASZ
STACK(F+12) = FAIN
                    U,T,FPBPTR,EA,NM1,NM2,DESTIN,TOGS,DA,                    28401000 T  0000:0
STACK(F+13) = U
STACK(F+14) = T
STACK(F+15) = FPBPTR
STACK(F+16) = EA
STACK(F+17) = NM1
STACK(F+20) = NM2
STACK(F+21) = DESTIN
STACK(F+22) = TOGS
STACK(F+23) = DA
                    CCAIN,EAIN,NAIN,NA,NASZ,                                 28401200 T  0000:0
STACK(F+24) = CCAIN
STACK(F+25) = EAIN
STACK(F+26) = NAIN
STACK(F+27) = NA
STACK(F+30) = NASZ
                    LSX,BUMPFA,POOL,INDX,                                    28401400 T  0000:0
STACK(F+31) = LSX
STACK(F+32) = BUMPFA
STACK(F+33) = POOL
STACK(F+34) = INDX
                    UN,SEG,MAX,K,L,MIDPTR,UNITNO;                            28401600 T  0000:0
STACK(F+35) = UN
STACK(F+36) = SEG
STACK(F+37) = MAX
STACK(F+40) = K
STACK(F+41) = L
STACK(F+42) = MIDPTR
STACK(F+43) = UNITNO
                ARRAY CCA[*],X[*],PAP[*],LAB[*],LBL[*],WRDSZ[*];             28401800 T  0000:0
STACK(F+44) = CCA
STACK(F+45) = X
STACK(F+46) = PAP
STACK(F+47) = LAB
STACK(F+50) = LBL
STACK(F+51) = WRDSZ
            $ SET OMIT = NOT(B6500LOAD)                                      28402000 T  0000:0
              LABEL NEXTNAME,BACK,UP,QUIT,NEXTSEG,NXT,TRANSFER;              28402800 T  0000:0
              LABEL NEXTSOURCE,CONTINUE,ON,BADNM;                            28403000 T  0000:0
              %                                                              28403200 T  0000:0
              %*************************************************************28403400 T  0000:0
              %                                                              28403600 T  0000:0
              DEFINE                                                         28403800 T  0000:0
                   ACCESSD    = TOGS.[3:1]#,                                28404000 T  0000:0
                   EXPIRED    = TOGS.[4:1]#,                                28404200 T  0000:0
                   NOHASH     = TOGS.[7:1]#,                                28404400 T  0000:0
                   OK         = TOGS.[18:1]#,                               28404600 T  0000:0
                   INXLST     = TOGS.[19:1]#,                               28404800 T  0000:0
                   WEIRDFORK  = TOGS.[20:1]#,                               28405000 T  0000:0
                   FORKED     = TOGS.[23:1]#,                               28405200 T  0000:0
                   B6500      = TOGS.[24:1]#,                               28405400 T  0000:0
                   SOURCEFILEFOUND=TOGS.[25:1]#,                            28405600 T  0000:0
                   REEL1START=TOGS.[34:1]#;                                 28405800 T  0000:0
```

```
%
%*********************************************************
%
DEFINE DSED     = (TERMSET(P1MIX))#,
     ABORT      = LIBRARYHELP(4)#,
     RB5        = @3677777777777777#,
     RB4        = @3577777777777777#,
     NUMOPT     = 6#,
     UNITNUM = [1:5]#,                                          %148-
     SPOUTUNIT = 0#;
%*********************************************************
DEFINE NOTCOPIED(NOTCOPIED1) =
     BEGIN NT1:=NOTCOPIED1; NOCOPYMESS; END#;
SUBROUTINE NOCOPYMESS;
     LBMESS( MFID, FID, -67, NT1, TINUE[U], SPOUTUNIT, 1 );     %
%
%*********************************************************
%
SUBROUTINE GETASEGMENT;
BEGIN
     SEG:=CCA[29];
     DISKWAIT(-CCA,[CF],30,SEG);
     FORGETESPDISK(SEG);
     CCAIN:=0;
END;

%
%*********************************************************
%
% - USED TO CHECK THAT FILE NAME PAIRS HAVE
%   NOT APPEARED BEFORE IN THIS OR ANY OTHER "FA"
%
%*********************************************************
%
     REAL STREAM PROCEDURE RESOLVE(DIRADDR,MFID); VALUE DIRADDR;
     BEGIN LABEL FOUND,FINIS,AGAIN;
          SI:=DIRADDR;
AGAIN:    DI:=MFID;
          IF SC="0" THEN
           BEGIN SI:=SI-8;
                 IF 16 SC=DC THEN GO FOUND;
                 SI:=SI-24; GO AGAIN;
           END       ELSE

          IF SC="+" THEN GO FINIS ELSE
           IF SC="&" THEN BEGIN SI:=SI+5; SI:=SC; GO AGAIN; END;

FOUND:    RESOLVE:=SI;
FINIS:
     END;
```

```
28406000 T  0000:0
28406200 T  0000:0
28406400 T  0000:0
28406600 T  0000:0
28406800 T  0000:0
28407000 T  0000:0
28407200 T  0000:0
28407400 T  0000:0
28407500 C  0000:0
28407600 T  0000:0
28407700 T  0000:0
28407800 T  0000:0
28408000 T  0000:0
28408200 T  0000:0
28408400 P  0001:0
28408600 T  0004:0
28408800 T  0004:0
28409000 T  0004:0
28409200 T  0004:0
28409400 T  0004:0
28409600 T  0004:0
28409800 T  0005:0
28410000 T  0007:1
28410200 T  0008:0
28410400 T  0008:3
                 28409400
28410600 T  0009:0
28410800 T  0009:0
28411000 T  0009:0
28411001 T  0009:0
28411002 T  0009:0
28411003 T  0009:0
28411004 T  0009:0
28411005 T  0009:0
28411200 T  0009:0
28411400 T  0009:0
28411600 T  0009:1
28411800 T  0009:2
28412000 T  0009:3
28412200 T  0010:1
28412400 T  0010:2
28412600 T  0011:1
28412800 T  0011:3
                 28412200
28413000 T  0012:0
28413200 T  0013:0
                 28413200
28413400 T  0014:1
28413600 T  0014:2
28413800 T  0014:2
                 28411400
```

```
%
%*********************************************************
%
% - USED TO RESOLVE CONFLICTS AND PROCESS
%   OPTIONS ASSOCIATED ONLY WITH DISK SOURCES
%
%*********************************************************
%
SUBROUTINE SEARCHDIRECTORY;
BEGIN
     OK:=FALSE;
     IF NOT SYSTEMFILE(MFID,FID)
     AND ((MFID EQV "BADISK ") NEQ NOT 0)                          %163-
      THEN IF (T:=DIRECTORYSEARCH(MFID&1[3:47:1],FID OR M,3)) LSS 64
       THEN
            IF T=1 THEN NOTCOPIED(45) ELSE NOTCOPIED(15)

       ELSE BEGIN

            IF M[T+2] NEQ 0 THEN
            IF (USERCODE[P1MIX] EQV ABS(MCP)) NEQ NOT 0 THEN
            IF (USERCODE[P1MIX] EQV ABS(M[T+2])) NEQ NOT 0 THEN
             BEGIN
             P(DIRECTORYSEARCH(-MFID,FID,13),DEL);
             NOTCOPIED(41);

             GO NEXTNAME;
             END;

            IF EXPIRED OR ACCESSD THEN
             IF EXPIRED THEN
              BEGIN
              STREAM(T:=0:A:=CALCULATEPURGE(-M[T+3],[2:10]));
               BEGIN SI:=LOC A; DI:=LOC T; DS:=80CT; END;

              IF P GTR M[T+3],[12:18] THEN OK:=TRUE ELSE
               P(DIRECTORYSEARCH(-MFID,FID,13),DEL);
              END ELSE

              IF M[T+4],[11:1] THEN OK:=TRUE ELSE
               P(DIRECTORYSEARCH(-MFID,FID,13),DEL)
                              ELSE OK:=TRUE;
            END

       ELSE BEGIN NOTCOPIED(25); T:=2; END;


NEXTNAME:
       IF T GEQ 64 THEN FORGETSPACE(T);
    END;

    %
    %*********************************************************
    %
    % - USED TO DETECT THAT A PARTICULAR NAME PAIR
    %   IS WANTED...BASED ON DATA SUPPLIED BY CCLIB
    %
```

```
28414000 T  0015:0
28414200 T  0015:0
28414400 T  0015:0
28414401 T  0015:0
28414402 T  0015:0
28414403 T  0015:0
28414404 T  0015:0
28414405 T  0015:0
28414600 T  0015:0
28414800 T  0015:0
28415000 T  0015:0
28415200 T  0016:3
28415250 C  0017:1
28415400 T  0019:2
28415600 T  0023:2
28415800 T  0024:0
                28415800
28416000 T  0028:0
                28416000
28416200 T  0032:2
28416400 T  0034:2
28416600 T  0037:3
28416800 T  0041:2
28417000 T  0042:0
28417200 T  0043:3
                28417200
28417400 T  0046:0
28417600 T  0046:2
                28416800
28417800 T  0046:2
28418000 T  0048:1
28418200 T  0049:2
28418400 T  0050:0
28418600 T  0053:3
                28418600
28418800 T  0054:3
28419000 T  0059:1
28419200 T  0061:2
                28418200
28419400 T  0061:2
28419600 T  0066:1
28419800 T  0068:2
28420000 T  0070:3
                28416000
28420200 T  0070:3
                28420200
                28420200
28420400 T  0073:3
28420600 T  0073:3
28420800 T  0075:3
                28414800
28421000 T  0076:0
28421200 T  0076:0
28421400 T  0076:0
28421401 T  0076:0
28421402 T  0076:0
28421403 T  0076:0
```

```
    %*******************************************************                    28421404 T  0076:0
    %                                                                          28421405 T  0076:0
    REAL STREAM PROCEDURE COMPARE(MFID,STR); VALUE STR;                        28421600 T  0076:0
    BEGIN LABEL AG,FINIS;                                                      28421800 T  0076:0
          SI:=STR;                                                             28422000 T  0076:1
AG:       DI:=MFID;                                                            28422200 T  0076:2
          IF SC=">" THEN GO FINIS;   % END OF NA                               28422400 T  0076:3
          IF SC="+" THEN BEGIN SI:=SI+8; DI:=DI+8; END                         28422600 T  0077:2
                                                                                        28422600
                    ELSE IF 8 SC NEQ DC THEN BEGIN SI:=SI+8; GO AG; END;       28422800 T  0078:2
                                                                                        28422800
          IF SC="+" THEN SI:=SI+8                                              28423000 T  0079:3
                    ELSE IF 8 SC NEQ DC THEN GO AG;                            28423200 T  0080:1
          SI:=SI-16; COMPARE:=SI;                                              28423400 T  0081:2
FINIS:                                                                         28423600 T  0082:0
    END;                                                                       28423800 T  0082:0
                                                                                        28421800
```

```
%
%*****************************************************
%
SUBROUTINE ASIT;
BEGIN
     IF PAP.[FF]
      THEN BEGIN ASMFID:=IF (NT2:=M[NT1:=PAP.[CF]+(PAP.[FF] DIV 2)])
                         LSS 0 THEN MFID ELSE NT2;
                 ASFID:=IF (NT2:=M[NT1+1]) LSS 0 THEN FID ELSE NT2;
           END

      ELSE BEGIN ASMFID:=MFID;
                 ASFID:=FID;
           END;

END;

%
%*****************************************************
%
% - THIS ROUTINE IS RESPONSIBLE FOR EXTENDING THE SIZE
%   OF AN "FA" UNTIL IT NEEDS FORKING, AT WHICH TIME IT
%   WILL ATTEMPT TO START ANOTHER LIBMAIN/DISK TO HANDLE
%   THE CURRENT "FA".  PROCESSING SHOULD CONTINUE WITH
%   A NEW "FA" (REFER TO DOCUMENTATION)
%
%*****************************************************
%
SUBROUTINE INSERTORFORK;
BEGIN
     IF RESOLVE(FA+FAIN+1,ASMFID)=0
      THEN IF (FAIN:=FAIN+2) LSS MAX
           THEN BEGIN
ON:                IF FAIN GEQ FASZ
                    THEN BEGIN
                         TMP:=SPACE((FASZ:=FASZ+BUMPFA)+
                              (FASZ DIV 2)+2)+1;
                         M[TMP-1]:=M[FA-1];
                         MOVE(TEMP:=FASZ-BUMPFA,FA,TMP);
                         MOVE(TEMP DIV 2,FA+TEMP,TMP+FASZ);
                         FORGETSPACE(FA-1);
                         FA:=TMP;
                         FAINFO:=FA+FASZ;
                         END;
CONTINUE:                M[NT1:=FA+FAIN]:=ASMFID;
                         M[NT1+1]:=ASFID;
                         M[FAINFO+(FAIN DIV 2)]:=T&U[CTC];
                         SOURCEFILEFOUND:=TRUE;
                         END

                ELSE BEGIN
                         IF (U NEQ 18 AND U=M[FAINFO+(FAIN DIV 2)-1],[CF])
                          THEN IF LSX=0 THEN GO ON ELSE
                                BEGIN
                                M[(FAIN:=SPACE(FASZ+(FASZ DIV 2)+2)+1)-1]:=
                                 (FA+LSX-1)&"&"[1:43:5];
```

```
28424000 T  0082:2
28424200 T  0082:2
28424400 T  0082:2
28424600 T  0082:2
28424800 T  0083:0
28425000 T  0083:0
28425200 T  0083:0
28425400 T  0087:3
28425600 T  0091:2
28425800 T  0096:0
                  28425200
28426000 T  0096:0
28426200 T  0097:1
28426400 T  0098:0
                  28426000
28426600 T  0098:0
                  28424800
28426800 T  0098:1
28427000 T  0098:1
28427200 T  0098:1
28427201 T  0098:1
28427202 T  0098:1
28427203 T  0098:1
28427204 T  0098:1
28427205 T  0098:1
28427206 T  0098:1
28427207 T  0098:1
28427208 T  0098:1
28427400 T  0098:1
28427600 T  0099:0
28427800 T  0099:0
28428000 T  0101:3
28428200 T  0104:0
28428400 T  0105:0
28428600 T  0105:1
28428800 T  0106:1
28429000 T  0106:1
28429200 T  0111:2
28429400 T  0114:3
28429600 T  0117:1
28429800 T  0120:1
28430000 T  0121:2
28430200 T  0122:1
28430400 T  0123:2
                  28428600
28430600 T  0123:2
28430800 T  0126:0
28431000 T  0128:0
28431200 T  0131:0
28431400 T  0132:3
                  28428200
28431600 T  0132:3
28431800 T  0133:1
28432000 T  0136:0
28432200 T  0139:0
28432400 T  0139:2
28432600 T  0144:3
```

```
        MOVE((SEG:=FAIN-LSX),FA+LSX,EAIN);                              28432800 T  0147:2
        MOVE(SEG DIV 2,FAINF0+(LSX DIV 2),                              28433000 T  0150:2
             EAIN+FASZ);                                                28433200 T  0153:0
        WEIRDFORK:=TRUE;                                                28433400 T  0154:0
        FAIN:=LSX;                                                      28433600 T  0155:3
        END;                                                            28433800 T  0156:2
                                                                                    28432200
MOVE(FAIN DIV 2,FAINF0,FA+FAIN);                                        28434000 T  0156:2
FOR TMP:=5 STEP 5 UNTIL FPBPTR-5 DO                                     28434200 T  0159:0
 IF M[PRT[P1MIX,3] INX (TMP+4)] LSS 0 THEN                              28434400 T  0163:1
  STOPTIMING(TMP,1023);                                                 28434600 T  0166:2
LBMESS("LIBMAIN","DISK    ",50,0,0,SPOUTUNIT,1);                        28434800 T  0168:2
M[(TMP:=GETSPACE(12,CONTROLCARDAREAV,0)+4)-4] %167-                     28435000 P  0170:3
                                              ,AREAMIXF:=0;%            28435010 C  0173:2
IF (INDX:=USERCODE[P1MIX])= ABS (NOT 0) THEN                            28435200 T  0176:0
 BEGIN INDX:=0; UN:=31; END ELSE UN:=26;                                28435400 T  0178:0
                                                                                    28435400
EA:=M[FA-1];                                                            28435600 T  0183:3
COMMON:=GETUSERDISK(((TEMP:=FAIN+(FAIN DIV 2)+                          28435800 T  0185:3
       2) DIV 30)+1);                                                   28436000 T  0185:3
M[FA-1]:=FAIN;                                                          28436200 T  0190:1
M[FA+TEMP-2]:=DESTIN;                                                   28436400 T  0192:1
IF TEMP GTR 900 THEN                                                    28436600 T  0194:3
 BEGIN NAIN:=M[FA+898];                                                 28436800 T  0195:2
       DISKWAIT(FA+899,TEMP-900,COMMON+30);                             28437000 T  0198:0
       TEMP:=900;                                                       28437200 T  0200:3
       M[FA+898]:=NAIN;                                                 28437400 T  0201:2
 END;                                                                   28437600 T  0203:2
                                                                                    28436800
DISKWAIT(FA-1,TEMP,COMMON);                                             28437800 T  0203:2
                                                                                    28436800
DISKWAIT(FA-1,TEMP,COMMON);                                             28437800 T  0203:2
M[FA-1]:=EA;                                                            28438000 T  0205:1
STREAM(INDX,COMMON,TMP);                                                28438200 T  0207:1
 BEGIN DS:=8LIT"CC USER=";SI:=LOC INDX; SI:=SI+1;                       28438400 T  0208:2
 DS:=7CHR; DS:=24LIT";EX LIBMAIN/DISK;COMMON=";                         28438600 T  0210:1
 DS:=8DEC; DS:=6LIT";END.←";                                            28438800 T  0213:3
 END;                                                                   28439000 T  0215:0
                                                                                    28438400
$ SET OMIT = NOT(PACKETS)                                               28439200 T  0215:1
            IF PSEUDOMIX[P1MIX] GEQ 32 THEN                             28439400 T  0215:1
             NYLONZIPPER[P1MIX].[2:1]:=0;                               28439600 T  0216:1
$ POP OMIT                                                              28439800 T  0219:1
            TMP:=TMP&P1MIX[18:42:6]&UN[3:43:5];                         28440000 T  0219:1
            INDEPENDENTRUNNER(P(.CONTROLCARD),TMP,192);                 28440200 T  0222:0
$ SET OMIT = NOT(PACKETS)                                               28440400 T  0223:1
            IF PSEUDOMIX[P1MIX] GEQ 32 THEN                             28440600 T  0223:1
             SLEEP([NYLONZIPPER[P1MIX]],@1000000000000000);             28440800 T  0224:1
$ POP OMIT                                                              28441000 T  0226:2
            IF WEIRDFORK                                                28441200 T  0226:2
             THEN BEGIN                                                 28441400 T  0226:2
                  FA:=FAIN;                                             28441600 T  0227:3
                  FAINF0:=FA+FASZ;                                      28441800 T  0228:2
                  FAIN:=SEG;                                            28442000 T  0229:3
                  WEIRDFORK:=FALSE;                                     28442200 T  0230:2
                  END                                                   28442400 T  0232:1
                                                                                    28441400
             ELSE BEGIN                                                 28442600 T  0232:1
                  TMP:=FA+FAIN-1;                                       28442800 T  0234:0
```

```
                    M[(FA:=SPACE((FASZ:=BUMPFA)+(FASZ DIV 2)+2)          28443000 T  0235:3
                     +1)-1]:=TMP&"&"[1:43:5];                            28443200 T  0235:3
                    FA[NF0:=FA+FASZ;                                     28443400 T  0243:1
                    FA[N:=0;                                             28443600 T  0244:2
                    END;                                                 28443800 T  0245:1
                                                                                     28442600
                  LSX:=0;                                                28444000 T  0245:1
                  IF DESTIN.UNITNUM≠19 THEN                      %148-   28444100 P  0246:0
                  BEGIN                                                  28444150 T  0247:1
                  STREAM(A:=MIDPTR:ONE:=1,MID:=[DESTIN]);                28444200 T  0247:3
                  BEGIN SI:=LOC A; SI:=SI+7; IF SC="0" THEN              28444400 T  0249:1
                   BEGIN TALLY:=2; SI:=MID; SI:=SI+2;                    28444600 T  0250:1
                   5(IF SC=" " THEN JUMP OUT; SI:=SI+1;                  28444800 T  0251:0
                     TALLY:=TALLY+1); A:=TALLY; DI:=DI+A;                28445000 T  0252:2
                   DS:=LIT"1";                                           28445200 T  0253:3
                   END ELSE BEGIN DI:=DI+A; SI:=SI+16; DS:=ADD; END;     28445400 T  0254:1
                                                                                     28444600
                                                                                     28445400
                  END;                                                   28445600 T  0255:2
                                                                                     28444400
                  MIDPTR:=P;                                             28445800 T  0255:3
                  END;                                                   28445900 T  0256:1
                                                                                     28444150
                  GO CONTINUE;                                           28446000 T  0256:1
                  END                                                    28446200 T  0256:3
                                                                                     28431600
      ELSE IF U=18 THEN P(DIRECTORYSEARCH(-MFID,FID,13),DEL);  %137-     28446300 P  0256:3
END;                                                                     28446400 T  0260:1
                                                                                     28427600
%                                                                        28446600 T  0260:2
                                                                                     28427600
%*********************************************************%             28446800 T  0260:2
%                                                                        28447000 T  0260:2
SUBROUTINE SCANEXCEPT;                                                   28447200 T  0260:2
BEGIN                                                                    28447400 T  0261:0
     FOR L:=0 STEP 2 UNTIL TMP DO                                        28447600 T  0261:0
     IF (PAP[L] EQV MFID)= NOT 0 OR PAP[L] LSS 0 THEN                    28447800 T  0262:0
     IF (PAP[L+1] EQV FID)= NOT 0 OR PAP[L+1] LSS 0 THEN                 28448000 T  0265:0
      BEGIN INXLST:=TRUE;                                                28448200 T  0269:2
      IF NOT (PAP[L].[1:1] OR PAP[L+1].[1:1])                            28448400 T  0271:3
       THEN BEGIN                                                        28448600 T  0273:2
            PAP[L]:=PAP[TMP];                                            28448800 T  0275:1
            PAP[L+1]:=PAP[TMP+1];                                        28449000 T  0276:3
            PAP.[8:10]:=PAP.[8:10]-2;                                    28449200 T  0279:1
            END;                                                         28449400 T  0282:2
                                                                                     28448600
      L:=TMP;                                                            28449600 T  0282:2
      END;                                                               28449800 T  0283:1
                                                                                     28448200
END;                                                                     28450000 T  0285:2
                                                                                     28447400
%                                                                        28450200 T  0285:3
%*********************************************************%             28450400 T  0285:3
%                                                                        28450600 T  0285:3
%                    CODE STARTS HERE                                    28450800 T  0285:3
%                                                                        28451000 T  0285:3
%*********************************************************%             28451200 T  0285:3
%                                                                        28451400 T  0285:3
```

```
STRFAM(8:=PRT[PIM[X,3]); BEGIN 2(DS:=40LIT"0"); END;                                28451600 T  0285:3
                                                                                                  28451600
LAB:= ARRAYDESC(15,LABELAREAV);                                        %167-        28451800 P  0303:3
IF NOT COMMON.[2:1] THEN                                                            28452000 T  0307:2
BEGIN                                                                               28452200 T  0308:2
DISKWAIT(-[TEMP],1,COMMON);                                                         28452400 T  0309:0
FA:=TYPEDSPACE(TMP:=TEMP+(TEMP DIV 2)+2,DATAAREAV)+1;%                 %167-        28452600 P  0310:2
FAINFO:=FA+TEMP;                                                                    28452800 T  0315:1
IF TEMP GTR 900 THEN                                                                28453000 T  0316:2
 BEGIN NAIN:=M[FA+898];                                                             28453200 T  0317:1
       DISKWAIT(-(FA+899),TMP-900,COMMON+30);                                       28453400 T  0319:3
       TMP:=900;                                                                    28453600 T  0322:3
       M[FA+898]:=NAIN;                                                             28453800 T  0323:2
 END;                                                                               28454000 T  0325:2
                                                                                                  28453200
DISKWAIT(-(FA-1),TMP,COMMON);                                                       28454200 T  0325:2
FAIN:=(FASZ:=TEMP)-2;                                                               28454400 T  0327:2
DESTIN:=M[FAINFO+(FASZ DIV 2)];                                                     28454600 T  0329:1
FORKED:=TRUE;                                                                       28454800 T  0331:3
LIBRARYTRANSFER;                                                                    28455000 T  0333:2
END;                                                                                28455200 T  0334:0
                                                                                                  28452200
CCA:= SAVEARRAYDESC(30,ESPDISKAREAV);                                  %167-        28455400 P  0334:0
CCA[29]:=COMMON.[CF];                                                               28455600 T  0337:3
GETASEGMENT;                                                                        28455800 T  0339:2
DESTIN:=CCA[1]; % DESTINATION                                                       28456000 T  0341:0
CCAIN:=2;                                                                           28456200 T  0342:0
MAX:=COMMON.[9:9]*2;                                                                28456400 T  0342:3
UNITNO:=COMMON.[3:6];                                                               28456600 T  0344:2
FA:=TYPEDSPACE((BUMPFA:=FASZ:=IF MAX > 128 THEN 128 ELSE MAX)+         %167-        28456800 P  0345:3
                (FASZ DIV 2)+2,DATAAREAV)+1;%                          %167-        28457000 P  0345:3
FAINFO:=FA+FASZ;                                                                    28457200 T  0353:0
M[FA-1]:=-0;   % MARK INITIAL DIRECTORY                                             28457400 T  0354:1
FAIN:=-2;                                                                           28457600 T  0356:2
NEXTSOURCE:                                                                         28457800 T  0357:2
    X:=0;                                                                           28458000 T  0357:2
    SOURCEFILEFOUND:=FALSE;                                                         28458200 T  0358:1
    TOGS:=0&CCA[CCAIN+1][3:3:NUMOPT]; % STORE OPTIONS                               28458400 T  0360:0
    LSX:=FAIN+2;                                                                    28458600 T  0362:2
    POOL:=(EA:=(NA:=SPACE(U:=(NASZ:=CCA[CCAIN+1].[CF]+1)+                           28458800 T  0363:3
        (T:=CCA[CCAIN+1].[FF])+(NASZ DIV 2)))+NASZ)+T;                              28459000 T  0363:3
    %                                                                               28459001 T  0374:0
    %*****************************************                                     28459002 T  0374:0
    %   PREPROCESSING OF DATA FROM CCLIB                                            28459003 T  0374:0
    %   INTO A RECOGNIZABLE FORM FOR LIBRARYCOPY                                    28459004 T  0374:0
    %*****************************************                                     28459005 T  0374:0
    %                                                                               28459006 T  0374:0
    MOVE(U,NA-1,NA);                                                                28459200 T  0374:0
    EAIN:=NAIN:=-2;                                                                 28459400 T  0376:0
BACK:                                                                               28459600 T  0377:2
    IF (CCAIN:=CCAIN+2) GEQ 28 THEN GETASEGMENT;                                    28459800 T  0377:2
    T:=CCA[CCAIN];                                                                  28460000 T  0381:0
UP:                                                                                 28460200 T  0382:0
    IF T=@14 THEN GO QUIT;                                                          28460400 T  0382:0
    IF T.[4:2]=0 THEN                                                               28460600 T  0383:1
     BEGIN M[NA+(NAIN:=NAIN+2)]:=T;                                                 28460800 T  0384:2
           M[NA+NAIN+1]:=CCA[CCAIN+1];                                              28461000 T  0388:0
```

```
            GO BACK;                                                                    28461200 T  0391:1
         END ELSE K:=0;                                                                 28461400 T  0391:3
                                                                                                        28460800
        WHILE T.[5:1] DO                                                                28461600 T  0393:0
         BEGIN M[NT1:=EA+(EAIN:=EAIN+2)]:=(T AND RB5);                                  28461800 T  0394:1
               IF K=0 THEN M[POOL+(NAIN DIV 2)]:=[M[NT1]];                              28462000 T  0398:1
               M[NT1+1]:=(CCA[CCAIN+1] AND RB5);                                        28462200 T  0402:2
               K:=K+2;                                                                  28462400 T  0405:3
               IF (CCAIN:=CCAIN+2) GEQ 28 THEN GETASEGMENT;                             28462600 T  0407:0
               T:=CCA[CCAIN];                                                           28462800 T  0410:0
         END;                                                                           28463000 T  0411:0
                                                                                                        28461800
        M[NT2:=POOL+(NAIN DIV 2)].[8:10]:=K;                                            28463200 T  0413:0
        M[NT2]:=(*P(DUP))&(K*2)[CTF]; % NEEDED TO FIND "AS"                             28463400 T  0417:1
        IF T.[4:1] THEN                                                                 28463600 T  0420:0
         BEGIN M[NT1:=EA+(EAIN:=EAIN+2)]:=(T AND RB4);                                  28463800 T  0420:3
               IF M[NT2]=0 THEN M[NT2]:=[M[NT1]]&1[32:47:1]                             28464000 T  0425:1
                           ELSE M[NT2]:=(*P(DUP))&1[32:47:1];                           28464200 T  0429:0
               M[NT1+1]:=(CCA[CCAIN+1] AND RB4);                                        28464400 T  0434:3
               GO BACK;                                                                 28464600 T  0438:0
         END ELSE GO UP;                                                                28464800 T  0440:0
                                                                                                        28463800
QUIT:                                                                                   28465000 T  0440:0
        M[NA+NAIN+2]:=0&">"[1:43:5];    % MARK END OF NA                               28465200 T  0440:0
        %                                                                               28465201 T  0443:2
        %****************************************                                       28465202 T  0443:2
        %   BEGIN PROCESSING THE PREPROCESSED DATA                                      28465203 T  0443:2
        %   ACCORDING TO THE SIX STAGES DETAILED ABOVE                                  28465204 T  0443:2
        %****************************************                                       28465205 T  0443:2
        %                                                                               28465206 T  0443:2
        IF CCA[CCAIN+1].UNITNUM=19                                          %148-       28465400 P  0443:2
         THEN BEGIN                 % SOURCE DISK                                     28465600 T  0445:1
          LIBRARYHELP(3);                                                               28465800 T  0446:0
          U:=18;                                                                        28466000 T  0446:3
          IF NOHASH                                                                     28466200 T  0447:2
           THEN BEGIN                % GO SERIALLY THRU DIRECTORY                      28466400 T  0447:2
            X:=[M[SPACE(30)]]&30[8:38:10];                                              28466600 T  0448:3
            DA:=3+DIRECTORYTOP;                                                         28466800 T  0452:2
NEXTSEG:      DISKWAIT(-X.[CF],30,DA:=DA+16);                                           28467000 T  0453:3
           FOR K:=28 STEP -2 UNTIL 0 DO                                                 28467200 T  0457:0
            BEGIN IF DSED THEN ABORT;                                                   28467400 T  0458:0
            IF (MFID:=X[K])=@114 THEN GO TRANSFER;                                      28467600 T  0460:3
            FID:=X[K+1];                                                                28467800 T  0462:3
            IF MFID=@14 THEN ELSE                                                       28468000 T  0464:1
            IF (INDX:=COMPARE(MFID,NA))=0                                               28468200 T  0465:2
             THEN                                                                       28468400 T  0468:1
             ELSE BEGIN PAP:=M[NT1:=POOL+((INDX-NA) DIV 2)];                            28468600 T  0468:3
                  IF NOT PAP.[7:1] THEN M[NT1].[7:1]:=1;                                28468800 T  0474:2
                  INXLST:=FALSE;                                                        28469000 T  0479:0
                  IF (TMP:=PAP.[8:10]-2) GEQ 0 THEN %EXCEPT LIST HERE                   28469200 T  0480:3
                   SCANEXCEPT;                                                          28469400 T  0483:1
                  IF NOT INXLST THEN                                                    28469600 T  0485:0
                   BEGIN SEARCHDIRECTORY;                                               28469800 T  0486:0
                         T:=0&T[FTF]&TOGS[3:3:NUMOPT];                                  28470000 T  0488:0
                         IF OK THEN BEGIN ASIT; INSERTORFORK; END;                      28470200 T  0490:1
                                                                                                        28470200
                   END;                                                                 28470400 T  0494:0
```

```
                                                                          28469800
          END;                                                  T  0494:0
                                                                          28468600
       END; % OF K LOOP                                         T  0494:0
                                                                          28467400
      GO NEXTSEG;                                               T  0496:1
          END % OF LINEAR SEARCH                                T  0496:3
                                                                          28466400
     ELSE BEGIN           % USE SEEKNAM                         T  0496:3
      FOR K:=0 STEP 2 UNTIL NASZ-3 DO                           T  0497:1
      BEGIN                                                     T  0501:2
      NM1:=M[NT1:=NA+K];                                        T  0501:2
      NM2:=M[NT1+1];                                            T  0504:0
      L:=0;                                                     T  0506:0
      PAP:=M[POOL+(K DIV 2)];                                   T  0506:3
NXT:  IF DSED THEN ABORT;                                       T  0509:1
      IF (NM1 OR NM2) LSS 0                                     T  0512:0
       THEN SEEKNAM(NM1,NM2,L,MFID,FID,DA,PAP)                  T  0512:3
       ELSE BEGIN MFID:=NM1; FID:=NM2; L:=1; END;               T  0515:2
                                                                          28473400
      IF L NEQ 0 THEN                                           T  0519:0
       BEGIN SEARCHDIRECTORY;                                   T  0519:3
             T:=0&T[FTF]&TOGS[3:3:NUMOPT];                      T  0521:0
             IF OK THEN BEGIN ASIT; INSERTORFORK; END;          T  0523:1
                                                                          28474200
             IF (NM1 OR NM2) LSS 0 THEN GO NXT;                 T  0527:0
       END                                               %589-  C  0528:3
                                                                          28473800
      ELSE IF DA=0 THEN LBMESS(NM1,NM2,-67,15,0,SPOUTUNIT,1);  %589-  P  0528:3
      END; % OF K LOOP                                          T  0533:0
                                                                          28471800
          END % OF HASHED SEARCH                                T  0533:2
                                                                          28471400
        END                                                     T  0533:2
                                                                          28465600
    ELSE BEGIN                 % SOURCE TAPE                    T  0533:2
     LIBRARYHELP(0);                                            T  0534:0
$ SET OMIT = NOT B6500LOAD                               %123-  C  0534:3
    FOR K:=(IF X[0]=@114 AND NOT REEL1START THEN X[1] ELSE 0)   T  0534:3
     STEP 2 UNTIL DA-2 DO                                       T  0539:2
     BEGIN IF DSED THEN ABORT;                                  T  0542:3
     IF ((MFID:=X[K]) OR (FID:=X[K+1])).[1:5] NEQ 0             T  0545:2
      THEN BEGIN NOTCOPIED(37); GO BADNM; END;                  T  0548:3
                                                                          28476600
                                                                          28476600
     IF (INDX:=COMPARE(MFID,NA))=0                              T  0552:2
      THEN                                                      T  0554:3
      ELSE BEGIN PAP:=M[NT1:=POOL+((INDX-NA) DIV 2)];           T  0555:1
           IF NOT PAP.[7:1] THEN M[NT1].[7:1]:=1;               T  0561:2
           INXLST:=FALSE;                                       T  0566:0
           IF (TMP:=PAP.[8:10]-2) GEQ 0 THEN % EXCEPT EXISTS    T  0567:3
            SCANEXCEPT;                                         T  0570:1
           IF NOT INXLST THEN                                   T  0572:0
            BEGIN T:=0&((K DIV 2)+1)[CTF]&TOGS[3:3:NUMOPT];     T  0573:0
                  ASIT; INSERTORFORK;                           T  0576:3
            END;                                                T  0579:0
                                                                          28478400
```

```
                END;                                                                28479000 T  0579:0
                                                                                                 28477200
BADNM:        END; % OF K LOOP                                                      28479200 T  0579:0
                                                                                                 28476200
TRANSFER:                                                                           28479400 T  0579:2
        FOR K:=0 STEP 1 UNTIL (NASZ DIV 2)-1 DO                                     28479600 T  0579:2
         IF M[POOL INX K],[7:1] THEN ELSE                                           28479800 T  0584:1
          BEGIN MFID:=M[NT1:=NA+(K*2)];                                             28480000 T  0586:3
                FID:=M[NT1+1];                                                      28480200 T  0590:1
                NOTCOPIED(17-(U=18)*2);                                             28480400 T  0592:1
                                                                                                 28480400
          END;                                                                      28480600 T  0596:0
                                                                                                 28480000
          END;                                                                      28480800 T  0596:2
                                                                                                 28475400
    IF (CCAIN:=CCAIN+2) GEQ 28 THEN GETASEGMENT;                                    28481000 T  0596:2
     IF NOT SOURCEFILEFOUND THEN                                                    28481200 T  0600:0
      BEGIN IF U LSS 16 THEN SETNOTINUSE(U,0);                                      28481400 T  0601:0
            STOPTIMING(FPBPTR,1023);                                                28481600 T  0603:3
      END;                                                                          28481800 T  0604:3
                                                                                                 28481400
    IF X NEQ 0 THEN FORGETSPACE(X);                                                 28482000 T  0604:3
    FORGETSPACE(NA);                                                                28482200 T  0607:1
    IF CCA[CCAIN]=@114 THEN BEGIN FASZ:=FAIN+2;                                     28482400 T  0608:0
                                  FORGETSPACE(CCA);                                 28482600 T  0610:3
                                  LIBRARYTRANSFER;                                  28482800 T  0611:3
                                  END                                               28483000 T  0612:1
                                                                                                 28482400
                       ELSE GO NEXTSOURCE;                                          28483200 T  0612:1
END OF LIBRARYCOPY;                                                                 28483400 T  0612:1
                                                                                                 28400300
                                                                                      SIZE= 0613 WORDS
```

```
                    PROCEDURE LIBRARYZERO;                                                                  28800000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00830
                    BEGIN                                                                                   28801000 T  0000:0
                        REAL COMMON=-4;                                                                     28802000 T  0000:0
STACK(F-4) = COMMON
                        REAL TYPE,SEG,I,J,K,N1,Q,N,W,T,THING,ZEROING;                                       28803000 T  0000:0
STACK(F+1) = TYPE
STACK(F+2) = SEG
STACK(F+3) = I
STACK(F+4) = J
STACK(F+5) = K
STACK(F+6) = N1
STACK(F+7) = Q
STACK(F+10) = N
STACK(F+11) = W
STACK(F+12) = T
STACK(F+13) = THING
STACK(F+14) = ZEROING
                        ARRAY S[*],X[*],RSULT[*],BUFFADR[*],IOD[*],H[*];                                    28804000 T  0000:0
STACK(F+15) = S
STACK(F+16) = X
STACK(F+17) = RSULT
STACK(F+20) = BUFFADR
STACK(F+21) = IOD
STACK(F+22) = H
                        LABEL GETONE,LOOP,WATE,ARD;                                                         28806000 T  0000:0
                        DEFINE DSED=TERMSET(P1MIX)#;                                                        28807000 T  0000:0
                        %*******************************************************                           28808000 T  0000:0
                        SUBROUTINE GETASEGMENT;                                                             28809000 T  0000:0
                        BEGIN                                                                               28810000 T  0001:0
                            SEG:=S[29];                                                                     28811000 T  0001:0
                            DISKWAIT(-S,[CF],30,SEG);                                                       28812000 T  0002:0
                            FORGETESPDISK(SEG);                                                             28813000 T  0004:1
                            I:=0;                                                                           28814000 T  0005:0
                        END; % OF GETASEGMENT                                                               28815000 T  0005:3
                                                                                                                        28810000
                        %*******************************************************                           28816000 T  0006:0
                        SUBROUTINE ABORT;                                                                   28817000 T  0006:0
                        BEGIN                                                                               28818000 T  0006:0
                            IF ZEROING THEN                                                                 28821000 T  0006:0
                            BEGIN                                                                           28821500 T  0006:1
                            H[4].[43:2]:=1;                                                                 28822000 T  0006:3
                            H[4].[2:1]:=0;                                                                  28822500 T  0009:1
                            DISKWAIT(THING,[CF],30,THING,[FF]);                                             28823000 T  0011:3
                            FORGETSPACE(H);                                                                 28823500 T  0014:0
                            END ELSE                                                                        28824000 T  0015:0
                                                                                                                        28821500
                            WHILE S[29] NEQ 0 DO GETASEGMENT;                                               28824250 T  0015:0
                            GO INITIATE;                                                                    28824500 T  0018:2
                        END; % OF ABORT                                                                     28827000 T  0019:0
                                                                                                                        28818000
                        %*******************************************************                           28828000 T  0019:1
                        SUBROUTINE IO;                                                                      28829000 T  0019:1
                        BEGIN                                                                               28830000 T  0020:0
                            STREAM(DSKADR:=Q+N,D:=(BUFFADR INX (2*W)));                                     28831000 T  0020:0
                                BEGIN SI:=LOC DSKADR; DS:=8DEC; END;                                        28831500 T  0022:3
                                                                                                                        28831500
```

```
                    RSULT[W]:=0;
                    IOREQUEST(-IOD[W]&@377[25:40:8],
                              IOD[W]&(IF (T:=N1-N) LSS 63 THEN 512+T ELSE 512+63)
                              [CTF]*(W INX RSULT));
                    N:=N+63;
               END; % OF IO

               %************************************************************
               SUBROUTINE ZEROAROW;
               BEGIN
                    N1:=H[8];          %NO. OF SEGMTS/ROW
                    Q:=H[K+9];         %DISK ADDR OF ROW
                    W:=0;              %BUFFER NO.
                    N:=0;              %INDEX OF SEGMTS
                    IO;
                    W:=1;              %SWAP BUFFERS
                    IF N GEQ N1 THEN RSULT[1]:=RSULT[1] OR IOMASK ELSE
          LOOP:     IO;
          WAIT:     COMPLEXSLEEP((((RSULT[1-W]) AND IOMASK)#0) OR DSED);
28293800  ACCIDENTAL ENTRY AT 1
                    IF DSED THEN ABORT;
                    W*IF (RSULT[0] AND RSULT[1] AND IOMASK)#0 THEN 1-W ELSE
                         ((RSULT[1] AND IOMASK)#0);
                    IF N<N1 THEN GO TO LOOP;% ROW IS NOT FINISHED
                    COMPLEXSLEEP((((RSULT[1-W]) AND IOMASK) NEQ 0) OR DSED);
28848000  ACCIDENTAL ENTRY AT 1
                    IF DSED THEN ABORT;
               END;%OF ZEROAROW

               %************************************************************
               S:= ARRAYDESC(30,ESPDISKAREAV);                          %167-
               X:=M[SPACE(1023)]&1023[8:38:10];
               TYPE:=COMMON.[FF];
               S[29]:=COMMON.[CF];
               GETASEGMENT;
               X[0]:=@14;
               MOVE(1022,X,[X[1]]);
          GETONE:
               IF DSED THEN ABORT;
               X[J]:=S[I];
               X[J+1]:=S[I+1];
               J:=J+2;
               IF (I:=I+2) GTR 26 THEN GETASEGMENT;
               IF S[I] NEQ @14 THEN GO GETONE;
               FORGETSPACE(S);                    % ZEROING IMPLIES S RETURNED.
               MOVE(J+1,X,S:=GETSPACE(J+1,0,1)+2);% RETURN UNUSED SPACE AND MAKE X
               FORGETSPACE(X);                    % INTO SAVE SPACE.
               X:=M[S]]&(J+1)[8:38:10];
               IOD:=[M[GETSPACE(8,0,1)+2]]&2[8:38:10];
               RSULT:=(2 INX IOD)&18[8:38:10];
               BUFFADR:=(4 INX IOD)&4[8:38:10];
               IOD[0]:=(BUFFADR INX 0)&1[8:38:10]&3[5:46:2];
               IOD[1]:=(BUFFADR INX 2)&1[8:38:10]&3[5:46:2];
               J:=-2;
               ZEROING:=1;
               WHILE X[J+J+2]#@14 DO %
               BEGIN
```

```
28831600 T  0023:2
28832000 T  0024:3
28832500 T  0026:3
28833000 T  0031:1
28833500 T  0033:0
28834000 T  0034:1
                                                                  28830000
28834500 T  0034:2
28835000 T  0034:2
28835500 T  0035:0
28836000 T  0035:0
28836500 T  0036:0
28837000 T  0037:2
28837500 T  0038:1
28838000 T  0039:0
28838500 T  0040:0
28839000 T  0040:3
28847000 T  0044:0
28848000 T  0046:0
28849000 T  0054:3
28850000 T  0058:0
28851000 T  0062:0
28852000 T  0064:0
28852100 T  0065:1
28852200 T  0073:3
28853000 T  0077:0
                                                                  28835500
28854000 T  0077:1
28855000 P  0077:1
28856000 T  0086:1
28857000 T  0090:0
28858000 T  0091:1
28859000 T  0093:0
28860000 T  0094:0
28861000 T  0095:1
28862000 T  0097:1
28863000 T  0097:1
28865000 T  0100:0
28866000 T  0101:2
28867000 T  0104:0
28868000 T  0105:1
28868100 T  0109:0
28868200 T  0110:2
28868300 T  0111:2
28868400 T  0116:1
28868500 T  0117:1
28869000 T  0120:1
28870000 T  0124:0
28871000 T  0126:2
28872000 T  0129:0
28873000 T  0133:0
28877000 T  0137:0
28878000 T  0138:0
28879000 T  0138:3
28880000 T  0141:1
```

```
            H:=[M[THING:=DIRECTORYSEARCH(X[J],X[J+1],5)]]&30[8:38:10];                28881000 T  0141:1
            IF DSED THEN ABORT;                                                       28882000 T  0146:0
            IF THING=0 THEN GO TO ARD;                                                28882100 T  0149:0
            IF M[THING+4].[42:3]=3 THEN                                               28882120 T  0150:1
            BEGIN FORGETSPACE(H);                                                     28882140 T  0152:3
                 GO TO ARD;                                                           28882160 T  0154:1
            END;                                                                      28882180 T  0154:3
                                                                                                  28882140
            H[4]:=(*P(DUP))&3[43:46:2]&1[2:47:1]&SYSNO[4:46:2];                       28882200 T  0154:3
            DISKWAIT(THING.[CF],30,THING.[FF]);                                       28882400 T  0159:1
            LBMESS( X[J], X[J+1], 62, 0,0,0, 1 );    % BEING BLANKED OUT            28883000 P  0161:2
            FOR K←1 STEP 1 UNTIL H[9].[43:5] DO% WRITE OUT FILE, ROW BY ROW           28884000 T  0164:3
            IF H[K+9]≠0 THEN BEGIN ZEROAROW;                                          28885000 T  0169:1
                                   IF STOPSET(P1MIX) THEN STOPM(0);                   28885500 T  0172:0
                              END;                                                    28885600 T  0174:3
                                                                                                  28885000
            H[4].[43:2]:=0; % NO LONGER SENSITIVE OR BEING ZEROED                     28886000 T  0175:1
            DISKWAIT(THING.[CF],30,THING.[FF]);                                       28887000 T  0177:3
            FORGETSPACE(H);                                                           28888000 T  0180:0
            P(DIRECTORYSEARCH(X[J],X[J+1],6),DEL);                                    28889000 T  0181:0
ARD:                                                                                  28889550 T  0183:2
    END;                                                                              28890000 T  0183:2
                                                                                                  28880000
    GO INITIATE;                                                                      28891000 T  0184:0
END; % OF LIBRARYZERO                                                                 28892000 T  0184:2
                                                                                                  28801000
                                                                                        SIZE= 0185 WORDS
```

```
                $ SET OMIT = NOT(AUXMEM)                                                                28999999 T  0000:0
                COMMENT  ERRORMESSER IS CALLED BY ERRORFIXER (IF OPTION 33 IS ON) TO                    30900000 T  0000:0
                         TYPE OUT A PSEUDO-TERMINAL MESSAGE. IT DOES ABOUT THE SAME                     30901000 T  0000:0
                         THING AS THE FIRST PART OF TERMINALMESSAGE;                                    30902000 T  0000:0
                PROCEDURE ERRORMESSER(TYPE); VALUE TYPE; REAL TYPE;                                     30903000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00837
PRT(671) = ERRORMESSER
                   BEGIN INTEGER S,ADR,BF,SA,N;                                                         30904000 T  0000:0
STACK(F+1) = S
STACK(F+2) = ADR
STACK(F+3) = BF
STACK(F+4) = SA
STACK(F+5) = N
                         NAME SD;                                                                       30905000 T  0000:0
STACK(F+6) = SD
                         LABEL L;                                                                       30906000 T  0000:0
                         BF←SPACE(10);                                                                  30907000 T  0000:0
                         SD←PRT[P1MIX,4];                                                               30908000 T  0003:3
                         NT1←SD[0];                                                                     30909000 T  0005:1
                         ADR←M[PRT[P1MIX,8]].[CF];                                                      30910000 T  0006:0
                         FOR S←1 STEP 1 UNTIL NT1 DO                                                    30911000 T  0008:3
                             IF (SA←SD[S].[18:15])>1023 AND SA≤ADR AND SD[S]>0 THEN                     30912000 T  0010:0
                             IF M[SA-1].[18:15]+SA≥ADR THEN GO L;                                       30913000 T  0015:1
                         S←0;                                                                           30914000 T  0021:2
                   L:    SD←[M[SPACE(TERMSGSZ)]];                                                       30915000 T  0022:1
                         ADR←ADR-SA;                                                                    30916000 T  0025:3
                         DISKWAIT(-(SD INX 0),TERMSGSZ,MESSAGETABLE[1].[22:26]);                        30917000 T  0027:0
                         N←IF TYPE=1 THEN 11 ELSE IF TYPE=2 THEN 9 ELSE IF TYPE=4 THEN                  30918000 T  0030:2
                                 7 ELSE IF TYPE=8 THEN 13 ELSE 5;                                       30919000 T  0035:1
                         STREAM(M←[SD[N]],J←[JAR[P1MIX,0]],P1MIX,S,ADR,X←S≠0,BF);                        30920000 T  0039:1
                         BEGIN SI←M; SI←SI+2; DS←6 CHR; BF←DI; DI←LOC M; SI←SI+1;                        30921000 T  0043:1
                               DI←DI+7; DS←CHR; DI←BF; DS←M CHR; DS←8 LIT" BRANCH ";                    30922000 T  0044:3
                               SI←J; SI←SI+1; DS←7 CHR; DS←LIT"/";                                      30923000 T  0047:1
                               SI←SI+1; DS←7CHR; DS←LIT"="; SI←LOC P1MIX;                               30924000 T  0048:2
                               DS←2DEC; BF←DI; DI←DI-2; DS←FILL; DI←BF;                                 30924500 T  0049:3
                              X(DS←5 LIT", S ="; SI←LOC S; DS←4 DEC; DS←5 LIT", A =";                   30925000 T  0051:0
                                   DS←4 DEC; BF←DI; DI←DI-4; DS←3 FILL;                                 30926000 T  0054:0
                                   DI←BF; DI←DI-13; DS←3 FILL);                                         30927000 T  0055:0
                               DI←BF; DS← LIT"←";                                                       30928000 T  0056:0
                         END;                                                                           30929000 T  0056:3
                                                                                                                    30921000
                         FORGETSPACE(SD);                                                               30929500 T  0057:0
                         SPOUTER(BF,0,ERRORMSG);                                                        30930000 T  0057:3
END ERRORMESSER;                                                                                        30931000 T  0059:2
                                                                                                                    30904000
                                                                                                      SIZE= 0060 WORDS
```

```
                    PROCEDURE ERRORFIXER(TYPE); VALUE TYPE; INTEGER TYPE;                    31000000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00839
                       COMMENT LOOKS FOR RUN-TIME-ERROR ACTION LABELS IN ALGOL PROGRAMS,      31001000 T  0000:0
                            AND HANDLES THEM, RETURNING ONLY IF NO LABEL GIVEN;               31002000 T  0000:0
                       BEGIN ARRAY AIT[*],PRTD[*];                                            31003000 T  0000:0
STACK(F+1) = AIT
STACK(F+2) = PRTD
                             NAME         ADDR;                                             31004000 T  0000:0
STACK(F+3) = ADDR
                             REAL I, GOT, ADR=ADDR,LABLE;                                    31005000 T  0000:0
STACK(F+4) = I
STACK(F+5) = GOT
STACK(F+3) = ADR
STACK(F+6) = LABLE
                             CHECKSTACKSPACE;                                                31005010 T  0000:0
                                                                                                      31005010
                                IF TYPE =2 THEN%OVRFLW                                       31005050 T  0005:3
                                IF JAR[P1MIX,2].[3:1] THEN                                   31005100 T  0006:2
                                IF(PRT[P1MIX,@51]AND @20)#0 THEN                             31005200 T  0008:2
                                BEGIN I←M[ADR←PRT[P1MIX,8] INX 0];                           31005300 T  0011:0
                                STREAM(I←(I INX 0)&I[30:10:2],GOT←[GOT]);                    31005310 T  0014:3
                                 BEGIN SI←I;SI←SI+2;DI←DI+6;DS←2 CHR END;                    31005320 T  0017:1
                                                                                                      31005320
                                IF GOT.[45:3]=5 THEN M[ADR-3]←@7777777777777;                31005330 T  0018:2
                                M[ADR-2]←@7777777777777777;                                  31005350 T  0022:1
                                     PRT[P1MIX,@51].[45:2]←2;                                31005400 T  0024:1
                                GO TO INITIATE;                                              31005500 T  0027:1
                                END;                                                         31005600 T  0027:3
                                                                                                      31005300
                           PRTD ← PRTROW[P1MIX];                                             31006100 T  0027:3
                            WHILE (AIT←PRTD     [AITNDX]).PBIT=0 DO                          31007000 T  0028:3
                                MAKEPRESENT([PRTD     [AITNDX]] INX 0);                      31008000 T  0031:1
                           I←AIT[0]+1;                                                       31009000 T  0036:0
                           DO I←I-1 UNTIL((GOT← (ADDR←AIT[I]),OWNBIT AND ( ADR.[CF]          31010000 T  0037:2
                                =TYPE)) OR(I≤1)); % LOOK FOR ENTRY                           31011000 T  0040:1
                           IF GOT THEN % WILL REINITIATE THE GUY, SO SET HIM UP              31012000 T  0043:3
                           BEGIN IF (LABLE←M[ ADR,MOM])#0 THEN                               31013000 T  0044:0
                                IF LABLE#15 THEN                                             31013050 T  0047:0
                                IF LABLE.BLKCNTR≤(PRTD[16]+(LABLE.MOM#0))THEN                31013100 T  0048:1
                                BEGIN IF PRTD     [CURBLKCNTR]>LABLE.BLKCNTR THEN            31014000 T  0051:3
                                     BEGIN PRTD     [CURBLKCNTR]←LABLE.BLKCNTR+1;            31015000 T  0053:3
                                      ASR;                                                   31016000 T  0056:2
                                     END; IF(ADDR←LABLE.MOM)=0 THEN                          31017000 T  0057:0
                                                                                                      31015000
                                          LABLE.MOM←ADDR←PRTD[10],MOM+2;                     31017100 T  0058:3
                                     ADDR←ADDR&ADR[33:33:15];                                31017200 T  0062:1
$ SET OMIT = PACKETS
                                     ERRORMESSER(TYPE);                                      31017209 T  0063:2
                                     IF PRTD[LABLE.[CF]].PBIT=0 THEN                         31017220 T  0063:2
                                          MAKEPRESENT([PRTD[LABLE.[CF]]].[CF]);              31017300 T  0064:1
                                     DO UNTIL(*(ADDR←HUNT(ADDR+1))).[1:3]=4;                 31017400 T  0066:1
                                       ADDR     [1]←M[PRTD     [8] INX NOT 0];              31018000 T  0068:3
                                       ADDR     [2]←M[PRTD     [8]]&0[10:10:2]&              31019000 T  0072:0
                                (LABLE)[18:18:15]&PRTD     [(LABLE).[CF]][33:33:15];         31020000 T  0075:1
                                     PRTD     [8]←P(DUP,LOD)&(ADDR INX 2)[33:33:15];         31021000 T  0078:1
                                     GO INITIATE;                                            31022000 T  0080:2
                                END; END;                                                    31023000 T  0083:0
                                                                                             31024000 T  0083:2
```

```
SIZE= 0084 WORDS
31003000
      31025000 T  00831?
31013000
31014000
```

```
END ERROFIXF#1
```

```
                PROCEDURE JORMFSS(MIX,Q,A,B,C,D); VALUE MIX,Q,A,B,C,D;%                                  32000000 T  0000:0
                                                                                        START OF REL SEGMENT; DISK ADDRESS = 00842
                    REAL MIX,Q,A,B,C,D;%                                                                32000100 T  0000:0
                    COMMENT : THIS PROCEDURE CAN BE USED TO BUILD AND SPOUT A MESSAGE                   32000110 T  0000:0
                              THAT IS TO BE PRECEEDED BY A <JOB SPECIFIER> WHICH IT                     32000120 T  0000:0
                              BUILDS AUTOMATICALLY FOR THE MIX GIVEN;                                   32000130 T  0000:0
                    BEGIN REAL BUF,T;%                                                                  32000200 T  0000:0
STACK(F+1) = BUF
STACK(F+2) = T
                $ SET OMIT = NOT(PACKETS)                                                               32000249 T  0000:0
                        REAL UNITNO;                                                                    32000250 T  0000:0
STACK(F+3) = UNITNO
                $ POP OMIT                                                                              32000251 T  0000:0
                        LABEL EXIT;                                                                     32000280 T  0000:0
                        BUF ← SPACE(9);                                                                 32000300 T  0000:0
                        IF MIX = 0 THEN                                                                 32000400 T  0003:0
                        BEGIN T:=SPACE(30);D;SKWAIT(-T,30,0);                                           32000500 T  0003:3
                              STREAM(M:=M[T+10+5×SYSNO],F:=M[T+11+5×SYSNO],BUF);                        32000510 T  0008:0
                              BEGIN DS:=3 LIT" 0:"; SI:=LOC M; SI:=SI+1; DS:=7 CHR;                     32000520 T  0013:3
                                    DS:=LIT"/";SI:=SI+1;DS:=7CHR;DS:=3LIT"= 0";                         32000530 T  0015:1
                              END;                                                                      32000540 T  0017:0
                                                                                                                   32000520
                              FORGETSPACE(T);                                                           32000600 T  0017:1
                              T:=(BUF+2)&5[30:45:3];                                                    32000650 T  0018:0
                        END ELSE%                                                                       32000700 T  0020:1
                                                                                                                   32000500
                        IF JARROW[MIX]≠0 THEN                                                           32000750 T  0020:1
                        BEGIN; STREAM(C←0:R← IF (T← PRYOR[MIX])<0 THEN T ELSE T INX 0,                  32000800 T  0021:3
                          J ← JARROW[MIX],MIX,A ← IF JAR[MIX,0]<0 THEN JAR[MIX,30]                      32000810 T  0026:2
                          ELSE 0,BUF);                                                                  32000812 T  0030:0
                        BEGIN DS ← LIT " "; SI ← LOC R; DS ← 6 DEC;%                                    32000850 T  0031:2
                            DI ← DI-6; DS ← 5 FILL; DI ← BUF; DI ← DI+7;%                               32001000 T  0032:2
                            DS ← LIT ":"; SI ← J;                                                       32001100 T  0033:2
                            IF SC="+" THEN                                                              32001120 T  0034:1
                                BEGIN  SI ← SI+1; DS ← 7 CHR; DS ← LIT " ";                             32001140 T  0034:3
                                       SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";                             32001160 T  0035:3
                                       SI ← LOC A; SI ← SI+1; DS ← 7 CHR;                               32001180 T  0036:3
                                END ELSE                                                                32001200 T  0037:2
                                                                                                                   32001140
                                BEGIN  SI ← SI+1; DS ← 7 CHR; DS ← LIT "/";                             32001220 T  0037:3
                                       SI ← SI+1; DS ← 7 CHR;                                           32001240 T  0038:3
                                END;                                                                    32001260 T  0039:1
                                                                                                                   32001220
                            DS ← LIT "="; SI ← LOC MIX; DS ← 2 DEC;%                                    32001300 T  0039:1
                            C ← DI; DI ← DI -2; DS ← 2 FILL;%                                           32001400 T  0040:1
                        END STREAM;                                                                     32001450 T  0041:0
                                                                                                                   32000850
                        T := POLISH;                                                                    32001475 T  0041:1
$ SET OMIT = NOT(PACKETS)
                        IF Q.[CF]=MIX THEN UNITNO:=PSEUDOMIX[MIX];                                      32001499 T  0041:3
$ POP OMIT                                                                                              32001500 T  0041:3
                        END ELSE                          % NO SUCH MIX                                  32001501 T  0044:2
                                                                                                        32001550 T  0044:2
                                                                                                                   32000800
                        BEGIN FORGETSPACE(BUF);                                                         32001575 T  0044:2
                            GO TO EXIT;                                                                 32001600 T  0045:3
                        END;                                                                            32001625 T  0046:1
                                                                                                                   32001575
```

```
            STREAM(A←[A],Z←0,T);%
            BEGIN SI ← A; DS ← LIT " ";%
                 4(IF SC ≠ "+" THEN
                 BEGIN TALLY ← 7; SI ← SI +1;      %
                      6(L: IF SC = "0" THEN%
                      BEGIN TALLY ← TALLY + 63; SI ← SI + 1;
                      END ELSE JUMP OUT);%

                      Z ← TALLY; DS ← Z CHR;%
                 END ELSE SI ← SI + 8);%

                 DS ← LIT "←";%
            END STREAM;%

            SPOUTER(BUF & Q[9:9:9],UNITNO,1);
EXIT:
    END JOBMESS;%
```

```
32001700 T  0046:1
32001800 T  0047:2
32001900 T  0048:1
32001910 T  0049:0
32001920 T  0049:2
32002000 T  0050:1
32002050 T  0050:3
                    32002000
32002070 T  0051:3
32002090 T  0052:2
                    32001910
32002100 T  0053:1
32002200 T  0053:3
                    32001800
32002300 T  0054:0
32002350 T  0056:1
32002400 T  0056:1
                    32000200
                SIZE= 0057 WORDS
```

```
                    PROCEDURE MIXPRINT(Q); VALUE Q; REAL Q;                                                 32100000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00844
                        COMMENT THIS PROCEDURE INVOKES JOBMESS TO TYPE THE JOB SPECIFIERS                   32100010 T  0000:0
                             OF EACH ACTIVE MIX;%                                                           32100020 T  0000:0
                        BEGIN REAL T,I;                                                                     32100100 T  0000:0
STACK(F+1) = T
STACK(F+2) = I

                             FOR I←1 STEP 1 UNTIL MIXMAX DO                                                 32100200 T  0000:0
                             IF JAR[I,*] ≠ 0 THEN%                                                          32100300 T  0002:0
                             BEGIN JOBMESS(I,Q,-0,-0,-0,-0); T ← 1 END;%                                    32100350 T  0003:0
                                                                                                                      32100350
                             IF NOT T THEN% NULL MIX                                                        32100400 T  0009:2
                             BEGIN; STREAM(T←T←SPACE(2)); DS←11LIT " NULL MIX←";%                           32100500 T  0010:0
                                  SPOUT(T & Q[9:9:9]);%                                                     32100600 T  0015:1
                             END NULL MIX;                                                                  32100700 T  0017:2
                                                                                                                      32100500
                        END MIXPRINT;%                                                                      32100800 T  0017:2
                                                                                                                      32100100
                                                                                                                SIZE= 0018 WORDS
```

```
                $ SET OMIT = NOT(DATACOM AND DCSPO )                                                    34999999 T  0000:0
               PROCEDURE DOLITTLE(OK,T,A,B,Z); VALUE T,A,B; REAL OK,T,A,B,Z;                            36001000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00845
PRT(672) = DOLITTLE
               BEGIN COMMENT FILE Q&A;                                                                  36002000 T  0000:0
               LABEL E,L; REAL Q; NAME N=Z;                                                             36003000 T  0000:0
STACK(F+1) = Q
STACK(F-1) = N
               DEFINE X=REPLY[P1M1X]#, DS=TERMSET(P1M1X)#;                                              36004000 T  0000:0
               IF OK THEN GO E;                                                                         36005000 T  0000:0
               L:  FILEMESS(A,B,N[0],N[1],N[2],N[3],N[4]);                                              36006000 T  0001:1
               IF AUTODS THEN TERMINATE(P1M1X&61[CTF]) ELSE                          %747-              36006500 C  0006:3
                  BEGIN X←-T&1[2:47:1]; COMPLEXSLEEP(X>0 OR Q←OK OR DS); END;        %747-              36007000 P  0009:1
28852100    ACCIDENTAL ENTRY AT 1
                                                                                                                   36007000
               IF DS THEN GO E; IF NOT Q THEN IF NOT WHYSLEEP(T) THEN GO L;                             36008000 T  0020:3
               E:  NT6←X; X←0                                                                           36009000 T  0025:0
               END OF DOLITTLE;                                                                         36010000 T  0026:2
                                                                                                                   36002000
                                                                                                        SIZE= 0028 WORDS
```

```
                REAL PROCEDURE FINDOUTPUT(MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS,KIND);          37000000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 00846
                        VALUE MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS;                          37001000 T  0000:0
                        REAL MID,FID,REEL,CDATE,CYCLE,TYPE,FORMS,KIND;                      37002000 T  0000:0
                BEGIN INTEGER GOTL,GOTT,GOTB,GOTP,GOTC;                                     37003000 T  0000:0
STACK(F+2) = GOTL
STACK(F+3) = GOTT
STACK(F+4) = GOTB
STACK(F+5) = GOTP
STACK(F+6) = GOTC
                        REAL U;                                                             37003100 T  0000:0
STACK(F+7) = U
                        LABEL EXIT,SW,ON,OWT,AROUND,OUKID,X,ROUND,CLAIMT,THERE,SOMEWHERE;    37004000 T  0000:0
                        REAL MID=MID;  %FAKE OUT COMPILER                                   37004100 T  0000:0
STACK(F-10) = MID
                $ SET OMIT = NOT(PACKETS)                                                   37004199 T  0000:0
                        REAL FREEF; LABEL FREEL; % FILE TO BE PRINTED ALONE                 37004200 T  0000:0
STACK(F+10) = FREEF
                $ POP OMIT                                                                  37004201 T  0000:0
                LABEL W3;                                                                   37005000 T  0000:0
                        DEFINE DSED = TERMSET(P1MIX)#;                                      37006000 T  0000:0
                        LABEL CP,MT,SU,PP,CKFM,DOITOVER;                          %P        37007000 T  0000:0
                        DEFINE PNTOG=(TYPE=0 OR TYPE GEQ 20)#;                              37007100 T  0000:0
                        DEFINE MAYBE(MAYBE1)=(IF FORMS THEN MAYBE1 ELSE 0)[30:42:6]#;       37007200 T  0000:0
                        DEFINE UNITNUM = [1:5]#;                                  %148-     37007300 C  0000:0
                        SWITCH TYPESW←CP,ROUND,MT,SU,ROUND,SU,ROUND,PP,PP,MT;     %P        37008000 T  0000:0
                        REAL SUBROUTINE PRINTER;%                                           37009000 T  0000:0
                        BEGIN IF LABELTABLE[20]=0 THEN BEGIN U←20; P(1) END ELSE%           37010000 T  0001:0
                                                                                                        37010000
                              IF LABELTABLE[21]=0 THEN BEGIN U←21; P(1) END ELSE P(0);%     37011000 T  0003:2
                                                                                                        37011000
                              PRINTER←GOTL←P;%                                              37012000 T  0007:1
                        END PRINTER;%                                                       37013000 T  0008:0
                                                                                                        37010000
                        REAL SUBROUTINE PTPUNCH;%                                           37014000 T  0008:1
                        BEGIN IF LABELTABLE[26]=0 THEN BEGIN U←26; P(1) END ELSE%           37015000 T  0009:0
                                                                                                        37015000
                              IF LABELTABLE[29]=0 THEN BEGIN U←29; P(1) END ELSE P(0);%     37016000 T  0011:2
                                                                                                        37016000
                              PTPUNCH←GOTP←P;%                                              37017000 T  0015:1
                        END PTPUNCH;%                                                       37018000 T  0016:0
                                                                                                        37015000
                        REAL T1,T2,T3;%                                                     37019000 T  0016:1
STACK(F+11) = T1
STACK(F+12) = T2
STACK(F+13) = T3
                        REAL SUBROUTINE PUNCH;%                                             37019100 T  0016:1
                        BEGIN IF LABELTABLE[22]=0 THEN BEGIN U←22;P(1) END ELSE P(0);       37019200 T  0017:0
                                                                                                        37019200
                              PUNCH←GOTC←P;                                                 37019300 T  0020:1
                        END PUNCH;                                                          37019400 T  0021:0
                                                                                                        37019200
                        REAL SUBROUTINE MAGTAPE;%                                           37020000 T  0021:1
                        BEGIN IF NOT(GOTL OR GOTB OR GOTC) THEN%                            37021000 T  0022:0
                        BEGIN IF (U:=T1.UNITNUM) ≠ 0 THEN                         %148-     37022000 P  0023:2
                              BEGIN U:=U-1; P(LABELTABLE[U]=0); GO OWT; END;       %148-     37022100 C  0025:3
                                                                                                        37022100
```

```
      IF T1 ≠ 0 THEN                                                    %148-
      BEGIN FOR U←0 STEP 1 UNTIL 15 DO%
            IF (MULTITABLE[U] EQV T1)=NOT 0 THEN%
            IF LABELTABLE[U]<0 THEN%
            IF RDCTABLE[U].[8:6]=P1MIX THEN%
            IF (T3←PRNTABLE[U])<0 THEN%
            IF T3.[15:15]≠0 THEN % DONT USE NONEXISTENT FIB             %548-
            IF M[M[T3.[15:15]-3] INX 5].[41:1] THEN%
            BEGIN P(1); GO OWT END;%

      END;%

      FOR U←0 STEP 1 UNTIL 15 DO%
      IF LABELTABLE[U]=0 THEN BEGIN P(1); GO OWT END;%

END;%

      P(0);%
OWT:  MAGTAPE←GOTT←P;%
END MAGTAPE;%

SUBROUTINE BADFM;     %BUILD AND SPOUT BAD FM MESSAGE %
BEGIN                                                                %RHR
     T1←SPACE(10);
     STREAM(A←TINU[U],MX←P1MIX,T1);                                  %RHR
     BEGIN DS←19 LIT "INVALID INPUT UNIT ";                          %RHR
         SI←LOC MX; DS←2 DEC; DS←2 LIT"FM";                          %RHR
         SI←LOC A; SI←SI+5; DS←3 CHR;                                %RHR
         DS←LIT "←"; DI←DI-8; DS←FILL;                               %RHR
     END; SPOUT(T1);                                                 %RHR

     LABELTABLE[U]←@114; READY←READY AND (U←NOT TWO(U));
     RRRMECH←RRRMECH AND U; SAVEWORD←SAVEWORD AND U;                 %RHR
END BADFM SUBROUTINE;                                                %RHR

     REAL SUBROUTINE BKUPTAPE;%
     BEGIN IF NOT(GOTL OR GOTC) THEN
           FOR U←0 STEP 1 UNTIL 15 DO%
           IF (LABELTABLE[U] EQV T3)=NOT 0 THEN%
           IF (MULTITABLE[U] EQV T2)=NOT 0 THEN%
           BEGIN P(1); GO AROUND END;%

           P(0);%
AROUND:    BKUPTAPE←GOTB←P;%
     END BKUPTAPE;%

 $ SET OMIT = NOT(PACKETS)
       FREEF:=TYPE.[1:1]; TYPE:=ABS(TYPE);
 $ POP OMIT
     IF TYPE>1 AND TYPE≠4 AND TYPE≠6 AND TYPE<15 THEN GO SOMEWHERE;
 ROUND:  IF TYPE=1 OR TYPE=4 OR (TYPE>16 AND TYPE<19) THEN
         IF PRINTER THEN BEGIN KIND←1; GO CKFM END;                  %P

         IF TYPE=0 OR (TYPE>20 AND TYPE) THEN
         IF PUNCH THEN BEGIN KIND←6; GO CKFM END;

         IF TYPE=4 OR TYPE=6 OR TYPE=16 OR TYPE=18 OR
```

```
37022200 C  0029:0
37023000 T  0029:3
37024000 T  0031:0
37025000 T  0032:3
37026000 T  0034:1
37027000 T  0036:1
37027500 C  0038:1
37028000 T  0040:0
37029000 T  0044:1
                 37029000
37030000 T  0047:3
                 37023000
37031000 T  0047:3
37032000 T  0049:0
                 37032000
37033000 T  0053:2
                 37022000
37034000 T  0053:2
37035000 T  0053:3
37036000 T  0054:2
                 37021000
37036100 T  0054:3
37036200 T  0055:0
37036300 T  0055:0
37036400 T  0057:1
37036500 T  0058:3
37036600 T  0061:2
37036800 T  0062:2
37036900 T  0063:1
37037000 T  0064:1
                 37036500
37037100 T  0065:3
37037200 T  0069:2
37037300 T  0072:0
                 37036200
37038000 T  0072:1
37039000 T  0073:0
37040000 T  0074:0
37041000 T  0076:0
37042000 T  0077:3
37043000 T  0080:0
                 37043000
37044000 T  0083:2
37045000 T  0083:3
37046000 T  0084:2
                 37039000
37046004 T  0084:3
37046005 T  0084:3
37046006 T  0090:0
37046020 T  0090:0
37046040 T  0094:2
37046060 T  0098:1
                 37046060
37046070 T  0102:0
37046075 T  0104:1
                 37046075
37046080 T  0108:0
```

```
          (TYPE GEQ 20 AND NOT TYPE.[46:1]) THEN                                    37046090 T  0111:3
          BEGIN T1←0; T2←IF TYPE GEQ 20 THEN "PUTMCP " ELSE "PBTMCP ";              37046100 T  0114:0
                T3←@122212342546447;                                                37046110 T  0118:0
                IF BKUPTAPE THEN GO THERE;                                  %P      37046120 T  0118:3
                IF MAGTAPE THEN                                             %P      37046140 T  0120:3
CLAIMT:         BEGIN MULTITABLE[U]←T2; LABELTABLE[U]←-T3;                   %P      37046160 T  0122:0
                      RRRMECH←TWO(U) OR RRRMECH;                            %P      37046170 T  0125:1
                      IF REEL=0 THEN REEL←1;                                        37046175 T  0127:0
                      RDCTABLE[U]←P(DUP,LOD)&REEL[14:38:10]                 %745-   37046177 C  0129:0
                                  &CDATE[24:31:17]&CYCLE[41:41:7];          %745-   37046178 C  0130:1
                      T1←GETSPACE(10,0,0)+4;                                %P      37046180 T  0133:2
                           STREAM(U:=TYNU[U],N:=PRNTABLE[U],[30:18],                37046190 T  0135:3
                                A←REEL,B←DATE,C←CYCLE,D←0,PN←TYPE GEQ 20,           37046192 T  0137:2
                                T←T1-2);                                            37046194 T  0139:1
                      BEGIN DS←12LIT" NEW PBT ON"; SI←LOC U; SI←SI+5;       %P      37046200 T  0140:1
                                PN(D←DI; DI←DI-6; DS←2LIT"UT"; DI←D);               37046205 T  0142:2
                           DS←3 CHR;DS←25LIT"← LABEL  0PBTMCP 0BACK-UP";    %P      37046210 T  0144:2
                                PN(D←DI; DI←DI-14; DS←2LIT"UT"; DI←D);              37046212 T  0148:1
                                SI := LOC A; DS := 3 DEC;                           37046215 T  0150:1
                               SI:=SI+3;DS:=5CHR;SI:=SI+7;DI:=DI+1;DS:=CHR;         37046217 T  0150:3
                                IF(DS:=2 LIT"0");DI:=DI-11;SI:=LOC N;               37046220 T  0152:0
                                DS:=5 DEC;                                          37046221 T  0153:2
                      END;                                                  %P      37046240 T  0153:3
                                                                                                  37046200
                      P(WAITIO(T1&8[8:38:10]&5[21:45:3],0,U),DEL);          %P      37046260 T  0154:0
                      SPOUT(T1-2);                                                  37046270 T  0157:2
                      T1.[1:11]:=@1737;                                             37046280 T  0159:1
                      P(WAITIO([T1],0,U),DEL);                              %P      37046300 T  0161:0
THERE:                LABELTABLE[U].[1:5]←@20; KIND←7; GO EXIT              %P      37046320 T  0162:2
          END; END;                                                         %P      37046340 T  0166:2
                                                                                                  37046160
                                                                                                  37046100
        IF (TYPE GEQ 15 AND TYPE LEQ 18) OR TYPE GEQ 22 THEN                        37046350 T  0170:0
           BEGIN                                                                    37046360 T  0172:3
 $ SET OMIT = NOT(PACKETS)                                                          37046369 T  0173:1
           IF (T1:=PSEUDOMIX[P1MIX])≠0 AND TYPE<22 AND NOT FREEF THEN               37046370 T  0173:1
           BEGIN                                                                    37046380 T  0176:2
                T1:=T1-32;                                                          37046390 T  0177:0
                T2:=PACKETPBD[T1];                                                  37046400 T  0178:1
                T3:=CIDTABLE[T1,6].[6:24];                                          37046410 T  0179:3
                IF T2=0 OR T3=0 OR (T2+10)>1000 THEN GO FREEL;                      37046420 T  0181:3
                PACKETPBD[T1]:=T2+10;                                               37046430 T  0185:3
           END ELSE                                                                 37046440 T  0188:3
                                                                                                  37046380
 $ POP OMIT                                                                         37046441 T  0188:3
           BEGIN                                                                    37046450 T  0188:3
 $ SET OMIT = NOT(PACKETS)                                                          37046459 T  0189:1
FREEL:                                                                              37046460 T  0189:1
 $ POP OMIT                                                                         37046461 T  0189:1
                T3:=NEXTCDNUM(1);                                                   37046470 T  0189:1
                T2:=001;                                                            37046480 T  0190:2
           END;                                                                     37046490 T  0191:1
                                                                                                  37046450
           KIND:=12;                                                                37046500 T  0191:1
           STREAM(T3,T2,D:=T1:=U:=SPACE(30));                                       37046520 T  0192:1
                BEGIN                                                               37046530 T  0196:0
                     DS←8 LIT"0@+1.013";DS←24 LIT"0";                               37046540 T  0196:0
```

```
                        DS:=7 LIT"8400000";DS:=10 LIT"0";                                  37046560 T  0200:2
                        SI:=LOC T3;SI:=SI+4; DS:=4 CHR;                                    37046580 T  0203:1
                        SI:=LOC T2; DS:=3 DEC;                                             37046590 T  0204:0
                        46(DS+4 LIT"0");                                                   37046600 T  0204:2
                    END; M[T1+1]+M[T1+8]+ PBDROWSZ+1;                                      37046620 T  0205:3
                                                                                                       37046530
          $ SET OMIT = NOT(SHAREDISK)                                                      37046624 T  0210:1
                    M[T1+5]+MID&(TYPE GEQ 22)[3:47:1]; % CP BK UP TOG                      37046630 T  0210:1
                    GO EXIT                                                        %P      37046640 T  0213:3
               END;                                                                %P      37046660 T  0214:1
                                                                                                       37046360
          W3:  FILEMESS("#      "                                                          37046680 T  0214:1
                    &(IF TYPE = 6 OR TYPE = 20 THEN "  "                                 37046685 T  0214:1
                      ELSE (IF PNTOG THEN "CP" ELSE "LP"))[12:36:12]                     37046690 T  0214:1
                    & (IF TYPE < 2 THEN "   "                                           37046700 T  0214:1
                     ELSE IF TYPE GEQ 20 THEN "PUT" ELSE "PBT")[30:30:18],             37046710 T  0214:1
                    " .. RQD" & (IF FORMS THEN "FM" ELSE "  ")[12:36:12],              37046720 T  0214:1
                    MID, FID, REEL, CDATE, CYCLE);                                     37046730 T  0214:1
               IF AUTODS THEN TERMINATE(P1MIX&61[CTF]) ELSE                    %747-   37046735 C  0231:1
               BEGIN                                                           %747-   37046737 C  0233:3
               REPLY[P1MIX] := -VWY & VOU[36:42:6] & MAYBE(VFM);                       37046740 T  0244:0
               COMPLEXSLEEP(((IF (TYPE≠6 AND TYPE≠20) THEN IF PNTOG THEN               37046760 T  0249:0
                    PUNCH ELSE PRINTER ELSE 0) OR REPLY[P1MIX]                         37046770 T  0249:0
                    >0 OR(IF TYPE>1 THEN BKUPTAPE OR MAGTAPE ELSE 0) OR                37046780 T  0249:0
                    DSED));                                                    %747-   37046800 P  0249:0
36007000    ACCIDENTAL ENTRY AT 1
               END;                                                            %747-   37046805 C  0270:0
                                                                                                       37046737
               IF DSED THEN GO TO X;                                           %747-   37046810 C  0270:0
               IF NOT(GOTB OR GOTT OR GOTL OR GOTC) THEN                               37046820 T  0272:0
               BEGIN IF NOT WHYSLEEP(VWY&VOU[36:42:6]&MAYBE(VFM))                      37046825 T  0274:0
                     THEN GO TO W3;                                                    37046826 T  0277:3
                  IF REPLY[P1MIX] = VOK THEN GO TO W3;                                 37046829 T  0279:1
                  IF REPLY[P1MIX].[CF] = VFM THEN BEGIN                                37046830 T  0280:3
                     LABELTABLE[U:=REPLY[P1MIX],[FF]] := -FID;                         37046835 T  0282:3
                     MULTITABLE[U] := MID;  KIND := UNIT[U],[1:4];                     37046840 T  0285:2
                     GO EXIT;                                                          37046845 T  0288:2
                  END;                                                                 37046850 T  0289:0
                                                                                                       37046830
                  IF PNTOG THEN BEGIN U:=REPLY[P1MIX],[FF]; GO CP END;                 37046855 T  0289:0
                                                                                                       37046855
          OUKID:  TYPE+IF (U+REPLY[P1MIX],[FF])=1 THEN 4 ELSE                     %P      37046860 T  0293:1
                     IF U=2 THEN 1 ELSE IF U=3 THEN 6 ELSE 15;                         37046880 T  0296:2
                  REPLY[P1MIX]+0; GO  ROUND;                                   %P      37046900 T  0301:1
               END; REPLY[P1MIX]+0;                                            %P      37046920 T  0303:0
                                                                                                       37046825
               IF GOTB THEN GO THERE ELSE IF GOTT THEN GO CLAIMT ELSE                  37046940 T  0304:1
               IF GOTC THEN KIND+6 ELSE KIND+1;                                        37046950 T  0305:2
          CKFM: IF FORMS THEN                                                  %P      37046960 T  0309:2
               BEGIN LABELTABLE[U]+-FID; MULTITABLE[U]+MID;                    %P      37046980 T  0309:3
                  DOLITTLE(FALSE,                                                      37047000 T  0313:0
                        VWY&VOK[36:42:6]&VOU[30:42:6]&VFM[24:42:6],                    37047010 T  0313:2
                  "#... FM"&TINU[U][12:30:18],"RQD    ",MID);                          37047020 T  0316:3
                  IF NT6=VOK THEN GO EXIT;                                             37047100 T  0319:0
                  IF DSED THEN GO TO INITIATE;                                         37047250 T  0320:1
                  KIND:=LABELTABLE[U]:=MULTITABLE[U]:=GOTL:=GOTP:=U:=0;                37047500 T  0322:3
                  IF NT6.[CF]=VFM THEN                                                 37047600 T  0327:1
```

```
                    IF (U:=NT6.[FF]) ≠ 20 AND U ≠ 21 AND KIND = 1   OR                  37047605 T  0328:2
                        U ≠ 22 AND KIND = 6 THEN                                        37047610 T  0332:3
                    BEGIN BADFM; GO ROUND END ELSE                                      37047615 T  0334:3
                                                                                                    37047615
                    BEGIN LABELTABLE[U]←-FID;                              %RHR         37047625 T  0339:0
                          MULTITABLE[U]←MID; KIND←UNIT[U].[1:4];           %RHR         37047650 T  0341:0
                          GO EXIT;                                         %RHR         37047660 T  0344:0
                    END ELSE BEGIN REPLY[P1MIX]←NT6; GO OUKID; END;        %RHR         37047670 T  0344:2
                                                                                                    37047625
                                                                                                    37047670
                END; GO X;                                                      %P      37047700 T  0346:3
                                                                                                    37046980
            SOMEWHERE: IF NOT FORMS THEN GO SW;                                         37047800 T  0347:1
                    DOLITTLE(FALSE,VWY&VFM[36:42:6],"#FM RQD",0,MID); U:=NT6.[FF];      37048000 T  0348:0
                    IF NOT DSED THEN                                                    37048100 T  0352:0
                    IF U LSS 16 THEN                                                    37048200 T  0353:2
                    IF PRNTABLE[U].[1:1] THEN ELSE                             %764-    37048300 P  0354:3
                        BEGIN LABELTABLE[U]:=-(*P(DUP));GO TO SOMEWHERE;END;   %764-    37048310 C  0356:3
                                                                                                    37048310
                    GO TO X;                                                            37048400 T  0361:1
            SW:   GO TO TYPESW[TYPE];%                                                  37056000 T  0361:3
            CP:   TYPE←IF U=1 THEN 21 ELSE IF U=3 THEN 20 ELSE                          37058000 T  0367:3
                      IF U=5 THEN 0 ELSE 22; REPLY[P1MIX]←0; GO ROUND;                  37059000 T  0371:3
            PP:   DOLITTLE(PTPUNCH,VWY,"#PP RQD",0,MID); GO X;                          37085000 T  0381:0
37046800    ACCIDENTAL ENTRY AT PTPUNCH
            SU:   T1←FID.[6:18];%                                                       37096000 T  0389:0
                  FOR U←0 STEP 1 UNTIL 31 DO%                                           37097000 T  0390:1
                  IF TINU[U].[30:18]=T1 THEN GO ON;%                                    37098000 T  0391:0
                  GO TO MT;%                                                            37099000 T  0395:1
            ON:   DOLITTLE(LABELTABLE[U]=0,VWY,"#...   "&T1[12:30:18],                  37100000 T  0395:3
37085000    ACCIDENTAL ENTRY AT 0
                  "RQD    ",MID); GO X;                                                 37100010 T  0402:1
            MT:   T1←MID;%                                                              37112000 T  0406:0
                  DOLITTLE(MAGTAPE,VWY,"#MT RQD",IF MID.UNITNUM≠0 THEN          %148-   37113000 P  0406:3
37100000    ACCIDENTAL ENTRY AT MAGTAPE
                      "ON  ..."&TINU[MID.UNITNUM-1][30:30:18]                   %148-   37113100 C  0413:2
                      ELSE 0,MID);                                              %148-   37113200 C  0415:3
                  IF DSED THEN GO TO X;                                                 37121000 T  0417:3
                  IF (T1←PRNTABLE[U].[15:15])≠0 THEN%                                   37122000 T  0419:3
                  BEGIN FILECLOSE(T1&3[18:33:15]);%                                     37123000 T  0421:3
                        M[M[T1-3] INX 5].[39:4]←1;%                                     37124000 T  0423:2
                  END;%                                                                 37125000 T  0428:0
                                                                                                    37123000
            X:    IF DSED THEN U←-1 ELSE                                                37172000 T  0428:0
                  BEGIN KIND←UNIT[U].[1:4];                                             37173000 T  0431:0
                  LABELTABLE[U]←-FID; MULTITABLE[U]←MID;%                               37174000 T  0435:3
                  RDCTABLE[U]←P(DUP,LOD)&REEL[14:38:10]&CDATE[24:31:17]                 37174100 T  0438:2
                              &CYCLE[41:41:7];                                          37174200 T  0440:3
                  END; EXIT: FINDOUTPUT←U                                               37175000 T  0443:0
                                                                                                    37173000
            END FINDOUTPUT;%                                                            37176000 T  0443:0
                                                                                                    37003000
                                                                                                SIZE= 0445 WORDS
```

```
                REAL PROCEDURE FINDINPUT(MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN);          37177000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00861
                              VALUE  MID,FID,REEL,CDATE,CYCLE,COBOL,   OF,MODE,FN;%              37178000 T  0000:0
                              REAL   MID,FID,REEL,CDATE,CYCLE,COBOL,UL,OF,MODE,FN;%              37179000 T  0000:0
                BEGIN REAL T1,T2,U,LO,HI,FIRST,IL;                                               37180000 T  0000:0
STACK(F+2) = T1
STACK(F+3) = T2
STACK(F+4) = U
STACK(F+5) = LO
STACK(F+6) = HI
STACK(F+7) = FIRST
STACK(F+10) = IL
                          REAL A=COBOL;                                                          37180100 T  0000:0
STACK(F-5) = A
                          INTEGER S,COUNT;                                                       37180200 T  0000:0
STACK(F+11) = S
STACK(F+12) = COUNT
                          INTEGER USASI=IL;                                                      37180300 T  0000:0
STACK(F+10) = USASI
                          ARRAY FPB=LO[*];                                                       37180400 T  0000:0
STACK(F+5) = FPB
                          LABEL LOOK,SEE,SRCHOUT;                                                37180500 T  0000:0
                          LABEL START,WHY,SXIT,X,Y,READALABEL,REW,EXIT;                          37180600 T  0000:0
                          LABEL ONN,DUN,FAIL;                                                    37180650 T  0000:0
                          DEFINE UNLABELED = UL#;                                                37180700 T  0000:0
                          DEFINE UNITNUM = [1:5]#;                                %148-          37180800 C  0000:0
                                                                                                 37180990 T  0000:0
                          REAL SUBROUTINE DSED; DSED:=TERMSET(P1MIX);                            37181000 T  0000:0
                                                                                                 37185300 T  0003:0
                          SUBROUTINE CHECKTERMIX;  % LET CALLER ATTEND HIS RESPONSIBILITIES.     37185310 T  0003:0
                          BEGIN                                                                  37185320 T  0003:0
                             IF DSED THEN                                                        37185330 T  0003:0
                             BEGIN                                                               37185340 T  0004:0
                                  IF JAR[P1MIX,9].SYSJOBF THEN      % MCP JOB                 37185350 T  0004:2
                                  BEGIN                                                          37185370 T  0006:0
                                       U:=-1;                                                    37185380 T  0006:2
                                       GO TO EXIT;                                               37185390 T  0007:2
                                  END ELSE GO TO INITIATE;                                       37185400 T  0008:0
                                                                                                                37185370
                             END;                                                                37185410 T  0009:0
                                                                                                                37185340
                          END;     %   CHECKTERMIX                                              37185420 T  0009:0
                                                                                                                37185320
                                                                                                 37185990 T  0009:1
                          REAL SUBROUTINE SEARCH;%                                               37186000 T  0009:1
                          BEGIN COUNT:=0;                                                        37186500 T  0010:0
                             IF NOT DSED THEN                                                    37186750 T  0010:3
                             BEGIN                                                               37187000 T  0012:1
                                  IF (LO:=(HI:=MID.UNITNUM-1)) GEQ 0 THEN            %148-       37187100 C  0012:3
                                     IF LABELTABLE[LO] GTR @314 THEN                 %148-       37187110 C  0015:2
                                        BEGIN COUNT←COUNT+1; P(LO,XCH);              %148-       37187120 C  0017:0
                                        MID←MULTITABLE[LO];   GO SEE;                %148-       37187130 C  0019:1
                                        END;                                         %148-       37187140 C  0020:3
                                                                                                                37187120
$ SET OMIT = NOT PACKETS
                                  IF (LO:=(HI:=PSFUDOMIX[P1MIX]))≠0 THEN                         37187200 T  0020:3
$ SET OMIT = PACKETS                                                                             37187250 T  0020:3
                                                                                                 37187375 T  0022:3
```

```
          LOOK:     FOR U:=LO STEP 1 UNTIL HI DO                                          37188500 T  0022:3
                    BEGIN IF S GEQ 0 THEN                                                 37188750 T  0024:0
                          IF (LABELTABLE[U] EQV (-@14))=NOT 0 THEN                        37189000 T  0024:3
                          COMPLEXSLEEP((LABELTABLE[U] EQV (-@14))≠NOT 0 OR                37189250 T  0027:1
                               (IF U<32 THEN UNIT[U].[13:5]=16 ELSE 0));                  37189500 T  0027:1
37113000    ACCIDENTAL ENTRY AT 0
                          IF (LABELTABLE[U] EQV FID)=NOT 0 THEN%                          37190000 T  0037:3
                          IF (MULTITABLE[U] EQV MID)=NOT 0 THEN%                          37191000 T  0039:2
                          IF ((T1←RDCTABLE[U]).[14:10]=REEL) OR (REEL=0) THEN%            37192000 T  0041:3
                          IF (T1.[24:17]=CDATE) OR (CDATE=0) THEN%                        37193000 T  0045:1
                          IF (T1.[41:7]=CYCLE) OR (CYCLE=0) THEN%                         37194000 T  0048:0
                          BEGIN                                                           37195000 T  0050:3
                               COUNT:=COUNT+1; P(U,XCH);                                  37195030 T  0051:1
                          END;                                                            37195040 T  0053:0
                                                                                                      37195000
                    END;                                                                  37195050 T  0053:0
                                                                                                      37188750
               FAIL:
                    IF LO = HI THEN IF COUNT = 1 THEN GO SEE ELSE                         37195100 T  0055:1
                    IF LO=0 THEN IF (LO:=JAR[P1MIX,6].[2:6])=23 OR LO=24                  37195200 T  0055:1
                    THEN HI:=LO ELSE GO TO ONN ELSE                                       37195250 T  0057:1
          ONN:      BEGIN LO:=23; HI:=24; END ELSE                          %754-         37195280 T  0061:3
                                                                                          37195300 P  0063:3
                                                                                                      37195300
                    IF LO=23 THEN BEGIN LO:= 0; HI:=15; END ELSE GO TO DUN;               37195400 T  0065:3
                                                                                                      37195400
                    GO TO LOOK;                                                           37195450 T  0069:0
          DUN:            IF CYCLE.[1:1] THEN % PBT                                       37195500 T  0069:2
                               BEGIN                                                      37195550 T  0070:1
                               IF COUNT=0 THEN IF FID.[1:5]<3 THEN                        37195600 T  0070:3
                               BEGIN FID.[1:5]←FID.[1:5]+1;                               37195650 T  0073:1
                                     LO←0; HI←15; GO LOOK;                                37195700 T  0076:2
                               END ELSE FID.[1:5]←1;                                      37195750 T  0078:2
                                                                                                      37195650
                               GO SRCHOUT;                                                37195800 T  0080:3
                          END;                                                            37195850 T  0081:1
                                                                                                      37195550
                          IF COUNT=0 THEN                                                 37196200 T  0081:1
                          IF MID≠0 THEN%                                                  37197000 T  0082:0
                          IF NOT CDATE.[1:1] THEN % NOT LIBMAIN/DISK                      37197500 T  0083:1
                          FOR U←0 STEP 1 UNTIL 15 DO%                                     37198000 T  0084:3
                          IF (MULTITABLE[U] EQV MID)=NOT 0 THEN%                          37199000 T  0086:0
                          IF (RDCTABLE[U].[24:17]=CDATE) OR (CDATE=0) THEN                37199100 T  0087:3
                          IF LABELTABLE[U]>0 THEN%                                        37200000 T  0090:3
                          BEGIN COUNT←COUNT+1;                                            37201000 T  0092:1
                                P(U,XCH);                                                 37202000 T  0094:0
                          END ELSE%                                                       37203000 T  0094:2
                                                                                                      37201000
                          IF RDCTABLE[U].[8:6]=P1MIX THEN%                                37204000 T  0094:2
                          IF (T1←MEM[PRNTABLE[U].[15:15]-3] INX 5]).[41:1] THEN           37205000 T  0096:2
                               IF T1.[43:1] OR T1.[40:1]=0 THEN%                          37206000 T  0101:2
                          BEGIN COUNT←COUNT+1; P(U,XCH) END;                              37207000 T  0104:1
                                                                                                      37207000
SEE:
                    END;                                                                  37207500 T  0108:3
                                                                                          37208000 T  0108:3
                                                                                                      37187000
            SRCHOUT:
                    SEARCH←S←COUNT>0;                                                     37208500 T  0108:3
                                                                                          37209000 T  0108:3
```

```
END SEARCH;%                                                                    37210000 T  0110:1
                                                                                            37186500
                                                                                37210090 T  0110:2
REAL SUBROUTINE RESEARCH;                                                       37210100 T  0110:2
BEGIN                                                                           37210150 T  0111:0
      S:=-2;                                                                    37210175 T  0111:0
      P(SEARCH);                                                                37210200 T  0112:0
      DO P(DEL) UNTIL (COUNT:=COUNT-1) LSS 0;                                   37210250 T  0113:0
      RESEARCH←S;                                                               37210300 T  0115:2
END RESEARCH;                                                                   37210400 T  0116:0
                                                                                            37210150
                                                                                37210990 T  0116:1
REAL SUBROUTINE REED;%                                                          37211000 T  0116:1
BEGIN IF (HI←WAITIO(T1,LO&@377[18:33:15],U) AND @367)≠0 THEN                     37212000 T  0117:0
      IF (HI AND NOT LO)≠0 THEN                                                 37213000 T  0120:1
BEGIN BLASTQ(U); SETNOTINUSE(U,0); STOPTIMING(FN,1023);                         37214000 T  0122:1
            FILEMESS(-"PARITY ","ON ... "&TINU[U][24:30:18],%                   37215000 T  0125:2
                  MID,FID,REEL,CDATE,CYCLE);%                                   37216000 T  0125:2
      END;%                                                                     37217000 T  0129:2
                                                                                            37214000
      IF DSED THEN                                                              37218000 T  0129:2
      BEGIN                                                                     37218100 T  0131:0
        SETNOTINUSE(U,0);                                                       37218200 T  0131:2
        STOPTIMING(FN,1023);                                                    37218300 T  0132:2
        CHECKTERMIX;                                                            37218400 T  0133:2
      END;                                                                      37219000 T  0135:0
                                                                                            37218100
      REED←HI;%                                                                 37220000 T  0135:0
END REED;%                                                                      37221000 T  0135:2
                                                                                            37212000
                                                                                37221090 T  0138:0
SUBROUTINE SEARCHCOM; % FILE SEARCH FOR COM 30                                  37221100 T  0138:0
BEGIN P(DEL);                                                                   37221120 T  0138:0
     IF NOT SEARCH THEN U:=-1 ELSE                                              37221140 T  0138:1
     IF COUNT=1 THEN U:=P ELSE                                                  37221160 T  0140:3
     BEGIN                                                                      37221180 T  0143:0
          S:=COUNT; T1:=0;                                                      37221200 T  0143:2
          COUNT:=IF COUNT>8 THEN 8 ELSE COUNT;                                  37221220 T  0145:0
          WHILE (COUNT:=COUNT-1) GEQ 0 DO                                       37221240 T  0147:3
          BEGIN U:=P;                                                           37221260 T  0150:0
               IF T1 THEN                                                       37221280 T  0150:2
               BEGIN                                                            37221300 T  0150:3
                    T1:=0; M[A],[30:18]:=TINU[U],[30:18];                       37221320 T  0151:1
                    A:=A+1;                                                     37221340 T  0155:2
               END ELSE                                                         37221360 T  0156:3
                                                                                            37221300
               BEGIN                                                            37221380 T  0156:3
                    T1:=1; M[A],[12:18]:=TINU[U],[30:18];                       37221400 T  0157:1
               END;                                                             37221420 T  0161:2
                                                                                            37221380
          END;                                                                  37221440 T  0161:2
                                                                                            37221260
          U:=-S;                                                                37221460 T  0162:0
     END;                                                                       37221480 T  0163:0
                                                                                            37221180
    GO EXIT;                                                                    37221500 T  0163:0
END;                                                                            37221520 T  0163:2
```

```
                                                                                                              37221120
                                                                                            37221990 T  0163:3
        START:%                                                                             37222000 T  0163:3
                IF UL<0 THEN SEARCHCOM ELSE                                                 37222100 T  0166:2
                IF UL THEN GO TO WHY ELSE %                                                 37222500 T  0169:0
               IF NOT SEARCH THEN%                                                          37223000 T  0169:3
        WHY:  BEGIN FILEMESS("#NO FIL",IF MID.UNITNUM≠0 THEN                   %148-        37224000 P  0172:1
                            "ON  ..."&TINU[MID.UNITNUM-1][30:30:18]            %148-        37224100 C  0172:3
                            ELSE 0,MID,FID,REEL,CDATE,CYCLE);                  %148-        37224200 C  0172:3
                     FIRST:=VOK&VWY[36:42:6]&VUL[30:42:6]&VIL[24:42:6];                     37225000 T  0180:0
                     IF COBOL THEN                                                          37225050 T  0183:3
                        FIRST:=FIRST&(VOF×OF)[18:42:6]&(VFR×UL)[12:42:6];                   37225100 T  0184:0
                     IF AUTODS THEN TERMINATE(P1MIX&61[CTF]) ELSE              %747-        37225800 C  0188:1
                     BEGIN                                                     %747-        37225900 C  0190:3
                     REPLY[P1MIX]←-FIRST&1[2:47:1];                                         37226000 T  0194:0
                     COMPLEXSLEEP(RESEARCH OR (REPLY[P1MIX]>0) OR DSED);                    37227000 T  0196:2
37189500    ACCIDENTAL ENTRY AT DSED
                     END;                                                      %747-        37227100 C  0204:1
                                                                                                              37225900
                     CHECKTERMIX;                                                           37228000 T  0204:1
                     IF S THEN S←SEARCH ELSE                                                37229000 T  0205:0
                     BEGIN IF NOT WHYSLEEP(FIRST) THEN GO TO WHY;                           37229500 T  0207:2
                           IF (T2:=(T1:=REPLY[P1MIX]).[FF]) GTR 64 THEN % IL                37230000 T  0209:1
                           BEGIN STREAM(T2:);                          % MID/FID            37230250 T  0212:0
                                 BEGIN SI:=T2;                                              37230500 T  0213:2
                                 LL:    SI:=SI+1; IF SC≠"L" THEN GO TO LL;                  37230750 T  0213:3
                                        SI:=SI+1; T2:=SI;                                   37231000 T  0214:3
                                 END;                                                       37231250 T  0215:1
                                                                                                              37230500
                                 T2:=P;                                                     37231500 T  0215:2
                                 NAMEID(HI,T2); MID:=HI; NAMEID(HI,T2);                     37232000 T  0216:0
                                 NAMEID(HI,T2); FID:=HI;                                    37232250 T  0218:3
                                 FORGETSPACE(T1.[FF]-1);                                    37232500 T  0220:2
                                 GO TO Y;                                                   37232750 T  0222:1
                           END;                                                             37233000 T  0222:3
                                                                                                              37230250
                           IF T1=VOK THEN GO TO Y;                     % OK                 37233250 T  0222:3
                           IF NOT (IL:=T1.[CF]=VIL) THEN               % OF, FR             37233500 T  0224:0
                           BEGIN U:=-1;                                                     37233750 T  0226:0
                                 REPLY[P1MIX]:=0;                                           37234000 T  0227:2
                                 GO TO EXIT;                                                37234250 T  0228:3
                           END;                                                             37234500 T  0229:1
                                                                                                              37233750
                           UNLABELED←-LABELTABLE[U←T1.[18:15]]=@314;%                       37235000 T  0229:1
                           P(U);                                                            37235100 T  0232:1
                           COUNT:=1;                                                        37235250 T  0232:2
                           IF LABELTABLE[U]=0 THEN                                          37235500 T  0233:1
                           BEGIN MULTITABLE[U]:=MID;                                        37235750 T  0234:1
                                LABELTABLE[U]:=FID;                                         37236000 T  0236:0
                           END ELSE                                                         37236250 T  0237:1
                                                                                                              37235750
                           BEGIN MID:=MULTITABLE[U].[6:42];                                 37236500 T  0237:1
                                FID:=LABELTABLE[U].[6:42];                                  37236750 T  0240:0
                           END;                                                             37237000 T  0242:1
                                                                                                              37236500
                    END;                                                                    37238000 T  0242:1
                                                                                                              37229500
```

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                    REPLY[P1MIX]:=0;                                                                37239000 T  0242:1
                END;%                                                                               37240000 T  0243:2
                                                                                                                 37224000
                IF COUNT ≤0 THEN GO TO START;                                          %120-        37240050 C  0243:2
                IF COUNT>1 THEN                                                                     37240100 T  0244:3
            SXIT: BEGIN FILEMESS("#DUP   ","FIL    ",MID,FID,REEL,CDATE,CYCLE);                     37240200 T  0245:2
                    WHILE (COUNT←COUNT-1)≥0 DO                                                      37240300 T  0248:2
                    BEGIN IF (U←P)<16 THEN IF MID≠0 THEN                                            37240400 T  0250:3
                          IF (T1←PRNTABLE[U].[15:15])≠0 THEN                                        37240500 T  0253:0
                             FILECLOSE(T1&@12[18:33:15]);                                           37240600 T  0255:2
                          STREAM(X←[T1NU[U]]:D←S←SPACE(10));                                        37240700 T  0257:1
                          BEGIN SI←X; SI←SI+5; DS←8 LIT " DUP ON ";                                 37240800 T  0260:3
                                DS←3 CHR; DS←LIT "←";                                               37240900 T  0262:2
                                X←DI;                                                               37240910 T  0263:1
                          END;                                                                      37241000 T  0263:2
                                                                                                                 37240800
                          T1←P;                                                                     37241010 T  0263:3
                          IF U≥32 THEN IF CIDROW[U   -32]≠0 THEN                                    37241020 T  0264:1
                                STREAM(DK←CIDTABLE[U   -32,2],T1);                                  37241030 T  0267:0
                                     BEGIN DI←DI-1; DS←6 LIT ",DECK ";                              37241040 T  0269:3
                                     SI←LOC DK; SI←SI+1; DS←7 CHR;                                  37241050 T  0271:0
                                     END;                                                           37241060 T  0271:3
                                                                                                                 37241040
                          SPOUT(S);                                                                 37241100 T  0272:0
                    END;                                                                            37241200 T  0273:1
                                                                                                                 37240400
                    REPLY[P1MIX]:= -VWY&VOK[36:42:6]&VIL[30:42:6];                                  37241300 T  0276:0
                    COMPLEXSLEEP(DSED OR (REPLY[P1MIX]>0));                                         37241400 T  0279:2
37227000    ACCIDENTAL ENTRY AT 0
                    CHECKTERMIX;                                                                    37241500 T  0286:1
                    IF (T1:=REPLY[P1MIX]).[33:15]=VIL THEN                                          37241510 T  0287:0
                      BEGIN REPLY[P1MIX]←0;                                                         37241520 T  0289:0
                            IF T1.[FF] > 64 THEN GO SXIT;                                           37241525 T  0290:3
                            P(T1.[18:15]);                                                          37241530 T  0292:2
                            GO TO X;                                                                37241540 T  0293:1
                      END;                                                                          37241550 T  0293:3
                                                                                                                 37241520
                    IF NOT WHYSLEEP(VWY&VOK[36:42:6]&VIL[30:42:6]) THEN                             37241600 T  0293:3
                       BEGIN S:=SEARCH;GO SXIT END;                                                 37241610 T  0296:3
                                                                                                                 37241610
              Y:    REPLY[P1MIX]:=0; GO TO START;                                                   37241700 T  0299:0
                END;                                                                                37241800 T  0300:3
                                                                                                                 37240200
              X:                                                                                    37241810 T  0300:3
                LABELTABLE[U←P].[1:5]←@20;                                                          37241900 T  0300:3
                IF NOT UNLABELED THEN                                                               37242000 T  0303:2
                BEGIN FPB:=PRT[P1MIX,3];                                                            37242100 T  0304:0
                     FPB[FN]:=MID;                                                                  37242200 T  0306:0
                     FPB[FN+1]:=FID;                                                                37242300 T  0307:1
                END;                                                                                37242400 T  0309:0
                                                                                                                 37242100
                IF U LSS 16 THEN                                                                    37242600 T  0309:0
                IF MID≠0 THEN                                                                       37242800 T  0309:3
                BEGIN IF (T1←PRNTABLE[U].[15:15])≠0 THEN%                                           37243000 T  0311:0
                      BEGIN FILECLOSE(T1&3[18:33:15]);%                                             37244000 T  0313:2
                            M[M[T1-3] INX 5].[39:4]←1;%                                             37245000 T  0315:1
                      END;%                                                                         37246000 T  0319:3
```

```
                                                                                                                    37244000
                RRRMECH←TWO(U) OR RRRMECH; STARTIMING(FN,U);                                    37248000 T  0319:3
                IF UNLABELED OR IL OR CYCLE.[1:1] THEN GO EXIT;                                 37248500 T  0322:2
                T1 ← SPACE(11)&10[8:38:10]&MODE[21:47:1]%                                       37249000 T  0325:0
                   &3[23:46:2];%                                                                37250000 T  0328:0
                L0←@40; FIRST←1;%                                                               37251000 T  0330:1
READALABEL:     IF REED ≠ 0 THEN IF FIRST THEN%                                                 37252000 T  0331:3
REW:            BEGIN FIRST←WAITIO(@4200000000,0,U); GO READALABEL END ELSE                     37253000 T  0334:1
                                                                                                                    37253000
                BEGIN SETNOTINUSE(U,1); FORGETSPACE(T1,[33:15]);                                37254000 T  0338:0
                      STOPTIMING(FN,1023); GO TO START END;                                     37255000 T  0340:3
                                                                                                                    37254000
                STREAM(Y:=0:X:=0,T1);                                                           37255100 T  0342:1
                    BEGIN  DI:=LOC X; DS:=8 LIT "VOL1HDR1";                                     37255200 T  0343:3
                           SI:=T1; DI:=DI-8;                                                    37255300 T  0345:1
                         IF 4 SC=DC THEN TALLY:=1 ELSE                                          37255400 T  0345:3
                       BEGIN  SI:=T1; IF 4 SC=DC THEN TALLY:=2; END;                            37255500 T  0346:3
                                                                                                                    37255500
                           Y:=TALLY;                                                            37255700 T  0347:3
                    END;                                                                        37255800 T  0348:0
                                                                                                                    37255200
                 IF(USASI:=P)>0 THEN USASITAPE(T1,[CF],USASI,2,U,0);                            37255900 T  0348:1
                STREAM(M←0,F←0,R←0,D←0,C←0:S←T1 INX 1);%                                        37256000 T  0352:0
                BEGIN SI←S; DI←LOC M; DS←2 WDS; DS←3 OCT;%                                      37257000 T  0354:3
                   DS:=5 OCT;DS:=2 OCT;                                                         37258000 T  0355:3
                END;%                                                                           37259000 T  0356:1
                                                                                                                    37257000
                IF (P=CYCLE OR CYCLE=0) AND (P(XCH)=CDATE OR CDATE=0) AND%                      37260000 T  0356:2
                   (P(XCH)=REEL OR REEL=0)AND ((P(XCH) EQV FID)=NOT 0) AND%                     37261000 T  0360:0
                   ((P(XCH) EQV MID)=NOT 0) THEN%                                               37262000 T  0363:3
                   BEGIN FORGETSPACE(T1.[33:15]); T1←@340000005;%                               37263000 T  0365:2
                         L0←0;T1←REED; GO TO EXIT;%                                             37264000 T  0368:0
                   END;%                                                                        37265000 T  0372:0
                                                                                                                    37263000
                   IF FIRST THEN GO REW;%                                                       37266000 T  0372:0
                 L0:=@60; DO UNTIL (FIRST:=REED).[42:1]; DO UNTIL REED.[42:1];                  37267000 T  0373:0
                 IF USASI>0 THEN DO UNTIL REED.[42:1] ELSE FIRST:=REED;                         37267050 T  0379:0
                   L0←@40; GO READALABEL;                                                       37267100 T  0384:2
               END;%                                                                            37268000 T  0385:3
                                                                                                                    37243000
FXIT: FINDINPUT←U;%                                                                             37269000 T  0385:3
END FINDINPUT;%                                                                                 37270000 T  0386:3
                                                                                                                    37180000
                                                                                                      SIZE= 0388 WORDS
```

```
                PROCEDURE STARTTIMING(FN,U); VALUE FN,U; REAL FN,U;%                                                    37271000 T  0000:0
                                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00874
                BEGIN ARRAY FPB[*]; INTEGER I,J;%                                                                       37272000 T  0000:0
STACK(F+1) = FPB
STACK(F+2) = I
STACK(F+3) = J
                      FPB←PRT[P1MIX,3];%                                                                                37273000 T  0000:0
                      IF U<32 THEN                                                                                      37273100 T  0002:1
                BEGIN IF FPB[FN+4]≥0 THEN                                                                               37274000 T  0003:0
                      BEGIN IF (I←FPB[FN+3].[36:6])≠0 THEN%                                                             37275000 T  0005:0
                            IF I NEQ U+1 OR FPB[FN+2].[8:10] NEQ RDCTABLE[U].[14:10]                                    37276000 T  0008:0
                            THEN                                                                                        37276010 T  0011:2
                            IF (I←FPB.[8:10])<(1023-ETRLNG) THEN                                                        37276100 T  0012:3
                            BEGIN J←GETSPACE(I+ETRLNG,2,1)+2;%                                                          37277000 T  0015:3
                 $ SET OMIT = SHAREDISK                                                                                 37277999 T  0019:0
                            MOVE(I,FPB,J);%                                                                             37278000 T  0019:0
                 $ POP OMIT                                                                                             37278001 T  0020:3
                 $ SET OMIT = NOT SHAREDISK                                                                             37278099 T  0020:3
                            MOVE(ETRLNG,[FPB[FN]],J+1);%                                                                37278200 T  0020:3
                            FORGETSPACE(FPB,[33:15]);%                                                                  37279000 T  0023:0
                            NFO[(P1MIX-1)×NDX]←                                                                         37279100 T  0024:2
                            PRT[P1MIX,3]←FPB←[M[J]]&(I+ETRLNG)[8:38:10];%                                               37280000 T  0026:0
                            FPB[FN+4]←0; FPB[FN+3].[24:12]←0;%                                                          37281000 T  0030:3
                      END;%                                                                                             37282000 T  0035:2
                                                                                                                                  37277000
                      FPB[FN+4]←FPB[FN+4]-CLOCK-P(RTR);%                                                                37283000 T  0035:2
                      FPB[FN+3].[36:6]←U+1;%                                                                            37284000 T  0039:0
                     IF U LSS 16 THEN% RDC & PRN LOG ENTRIES                                                            37284100 T  0042:2
                     BEGIN ;                                                                                            37284110 T  0043:1
                     STREAM(R:=RDCTABLE[U].[14:10],D:=RDCTABLE[U].[24:17],                                              37284120 T  0043:3
                            C:=RDCTABLE[U].[41:7],T:=[FPB[FN  +2]]);                                                    37284130 T  0046:0
                     BEGIN S1:=LOC R;DS:=3DEC;DS:=5DEC;DS:=DEC END;                                                     37284140 T  0048:1
                                                                                                                                  37284140
                     FPB[FN  +3].[6:17]:=PRNTABLE[U].[31:17];                                                           37284150 T  0049:2
                     END;                                                                                               37284310 T  0053:1
                                                                                                                                  37284110
                END   END ELSE                                                                                          37285000 T  0053:1
                                                                                                                                  37275000
                                                                                                                                  37274000
                BEGIN IF (I:=FPB[FN+4]) LSS 0 THEN                                                                      37285100 T  0053:1
                      BEGIN FPB[FN+4]←I←CLOCK+P(RTR); I←FPB[FN+3].[36:6]-1;                                             37285200 T  0055:3
                            FPB[FN+3].[24:12]←P(DUP).[24:12]+(J←TINU[I].[18:12]);                                       37285300 T  0061:2
                            IF I<16 THEN                                                                                37285305 T  0066:3
                                        IF J>0 THEN FILEMESS("#     I0"&TINU[I]                                         37285310 T  0067:2
                                  [12:30:18],"RETRIES",FPB[FN],FPB[FN+1],J,0,0); %715-                                  37285320 P  0068:3
                            TINU[I].[18:12]←0;                                                                          37285400 T  0074:0
                END END END TIMING;                                                                                     37285500 T  0076:2
                                                                                                                                  37285200
                                                                                                                                  37285100
                                                                                                                                  37272000
                                                                                                                              SIZE= 0079 WORDS
```

```
                REAL PROCEDURE DISKADDRESS(MID,FID,FPB3,A,H,IO);                                % (SHM)        37286000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00877
                   VALUE MID,FID,FPB3,A,H,IO;                                                   % (SHM)        37286100 T  0000:0
                   REAL  MID,FID,FPB3,A,IO;                                                     % (SHM)        37286200 T  0000:0
                   ARRAY H[*];                                                                               37286300 T  0000:0
                BEGIN LABEL EOF, EOF2;                                                                       37287000 T  0000:0
                      INTEGER I;                                                                             37287250 T  0000:0
STACK(F+2) = I
                      REAL T, V;                                                                             37287500 T  0000:0
STACK(F+3) = T
STACK(F+4) = V
                      IF A≥0 THEN%                                                                           37288000 T  0000:0
                      BEGIN T←(A DIV H[0].[30:12])×H[0].[42:6];%                                             37289000 T  0001:3
                            IF H[9] LEQ I:=(IF H[1]=0 THEN 0 ELSE T DIV H[1]) THEN                           37290000 T  0005:2
                            GO TO EOF;                                                                       37290100 T  0010:0
                            IF H[I:=I+10]=0 THEN      % NEW ROW NEEDED.                                   37291000 T  0010:2
                              IF IO THEN GO TO EOF ELSE  % EOF ON A READ.                                    37291200 T  0012:2
                              IF IO=2 THEN               % CALLED FROM FILEOPEN SO                            37291400 T  0013:1
                                 BEGIN                   % DONT EXPAND THE FILE YET.                         37291600 T  0014:3
                                 T:=1;                                                                       37291800 T  0015:1
                                 GO TO EOF2;                                                                 37292000 T  0016:0
                                 END                                                                         37292200 T  0016:2
                                                                                                                      37291600
                              ELSE                                                                           37292400 T  0016:2
                              IF H[4] THEN            % IN DIRECTORY, UPDATE HEADER.                        37292600 T  0016:2
                                 P(DIRECTORYSEARCH(-MID,FID,-H&I[CTF]),DEL)                                  37292800 T  0017:2
                              ELSE                    % NOT IN DIRECTORY,                                  37293000 T  0020:3
                                 BEGIN                                          % (SHM)                     37293210 T  0020:3
                                 IF (V:=FPB3.[18:5]) GTR 0 THEN % EU SPECIFIED  % (SHM)                     37293220 T  0021:1
                                    V:=(IF V GTR 20 THEN 0 ELSE -V) ELSE        % (SHM)                     37293230 T  0023:0
                                 IF (V:=FPB3.[16:2]) GTR 0 THEN % SPEED SPECIFIED %(SHM)                    37293240 T  0026:2
                                    V:=(IF V GTR 2 THEN 0 ELSE V) ELSE          % (SHM)                     37293250 T  0028:3
                                 V:=0; % NO SPEED OR EU SPECIFIED               % (SHM)                     37293260 T  0032:0
                                 H[I] := PETUSERDISK(H[8],V);                   % (SHM)                     37293270 T  0033:1
                                 END;                                           % (SHM)                     37293330 T  0035:2
                                                                                                                      37293210
                            T←H[I]+I←T MOD H[1];%                                                            37294000 T  0035:2
                            STREAM(D←[T]); BEGIN SI←D; DS←8 DEC END;%                                        37295000 T  0038:1
                                                                                                                      37295000
                      END ELSE%                                                                              37296000 T  0039:3
                                                                                                                      37289000
EOF:  T←0;%                                                                                                  37297000 T  0039:3
EOF2:                                                                                                        37297500 T  0041:0
                      DISKADDRESS←T;%                                                                        37298000 T  0041:0
END DISKADDRESS;%                                                                                            37299000 T  0041:3
                                                                                                                      37287000
                                                                                                          SIZE= 0043 WORDS
```

```
                PROCEDURE SETNOTINUSE(U,RWL); VALUE U,RWL; REAL U,RWL;                                  37302000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00879
                BEGIN REAL I,J;                                                                         37303000 T  0000:0
STACK(F+1) = I
STACK(F+2) = J
                      IF U<16 THEN P(WAITIO(@4200000000,@377,U),DEL);                                   37303200 T  0000:0
                      SLEEP([TOGLE],STATUSMASK);                                                        37304000 T  0003:1
                      RRRMECH←((I←TWO(U)) AND SAVEWORD) OR ((I←NOT I) AND RRRMECH);%                     37305000 T  0004:3
                      READY←READY AND I;%                                                               37306000 T  0008:3
                      IF RWL THEN                                                                       37312000 T  0010:0
                BEGIN                                                                                   37313000 T  0010:1
                      STREAM(S←T[INU[U]],M←MULTITABLE[U],F←LABELTABLE[U],                                37314000 T  0010:3
                             N←IF U<16 THEN PRNTABLE[U].[30:18] ELSE 0,                                 37314100 T  0012:2
                             T:=MULTITABLE[U]=0, TT:=U GEQ 16, D:=J:=SPACE(10));                        37314200 T  0015:2
                            BEGIN SI←S; SI←SI+5; DS←LIT "#"; DS←3 CHR;%                                 37315000 T  0019:3
                                  DS←6 LIT " RW/L "; SI←LOC M; SI←SI+1;                                 37316000 T  0021:0
                                  DS←7 CHR; DS←LIT " "; SI←SI+1; DS←7 CHR;                              37316100 T  0022:2
                                  T(M←DI;DI←DI-15;DS←7FILL;DI←M); TT(JUMP                               37316200 T  0023:3
                                  OUT TO LA); DS←LIT "("; DS←5 DEC; DS←LIT")";                          37316300 T  0026:0
                            LA:   DS←LIT "←";                                                           37316400 T  0028:0
                            END;%                                                                       37317000 T  0028:2
                                                                                                                    37315000
                         SPOUT(J);                                                                      37318000 T  0028:3
                      LABELTABLE[U]←@214;                                                               37318100 T  0030:0
                END ELSE LABELTABLE[U]←@114;                                                            37319000 T  0031:1
                                                                                                                    37313000
                      MULTITABLE[U]←RDCTABLE[U]←0;                                                      37319010 T  0034:1
                      IF U<16 THEN PRNTABLE[U]←0 ;                                                      37319020 T  0036:2
                END SETNOTINUSE;                                                                        37319100 T  0039:0
                                                                                                                    37303000
                                                                                                SIZE= 0040 WORDS
```

```
                PROCEDURE BLASTQ(U);                                                                    37320000 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 00881
                VALUE U;  REAL U;                                                                       37321000 T  0000:0
                BEGIN                                                                                   37322000 T  0000:0
                    REAL I,X;                                                                           37323000 T  0000:0
STACK(F+1) = I
STACK(F+2) = X
                    BOOLEAN SUBROUTINE CHECKIO;                                                         37323100 T  0000:0
                    BEGIN                                                                               37323200 T  0001:0
                        CHECKIO:=(I:=UNIT[U]).[5:8]≠0 OR (I.[14:1] AND I.[13:5]≠@31);                   37323300 T  0001:0
                    END;                                                                                37323400 T  0005:3
                                                                                                                    37323200
                    IF CHECKIO THEN COMPLEXSLEEP(NOT CHECKIO);                                          37324000 T  0006:0
37241400    ACCIDENTAL ENTRY AT CHECKIO
                    IF I.[16:1] THEN                        % SKIP I/O IN PROCESS                    37326000 T  0014:1
                    BEGIN I:=NFLAG(LOCATQUE[X:=I.[FF]]);                                                37327000 T  0015:0
                        LOCATQUE[X].[FF]:=@77777;                                                       37328000 T  0017:3
                        UNIT[U].[CF]:=X;                                                                37329000 T  0019:3
                    END ELSE                                                                            37330000 T  0021:3
                                                                                                                    37327000
                        UNIT[U].[5:43]:=(NOT 0).[18:30];                                                37331000 T  0021:3
                    WHILE (I:=I.[FF])≠@77777 DO                                                         37332000 T  0027:1
                    BEGIN RETURNIOSPACE(I);                                                             37333000 T  0029:2
                                                                                                                    37333000
                        I:=NFLAG(LOCATQUE[I]);                                                          37334000 T  0032:3
                    END;                                                                                37335000 T  0034:0
                                                                                                                    37333000
                END BLASTQ;%                                                                            37336000 T  0036:0
                                                                                                                    37322000
                                                                                                        SIZE= 0037 WORDS
                                                                                                                    37322000
```

```
                PROCEDURE BUILDLABEL(LABLE,MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,%          37337000 T  0000:0
                                                                                    START OF REL SEGMENT; DISK ADDRESS = 00883
PRT(673) = BUILDLABEL
                                   BSIZE,RSIZE);%                                           37338000 T  0000:0
                                VALUE LABLE,MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,      37339000 T  0000:0
                                      BSIZE,RSIZE;%                                         37340000 T  0000:0
                                ARRAY LABLE[*];%                                            37341000 T  0000:0
                                REAL  MID,FID,REEL,CDATE,CYCLE,PFACT,PTN,BLKODE,%           37342000 T  0000:0
                                      BSIZE,RSIZE;%                                         37343000 T  0000:0
                BEGIN;STREAM(D←[PFACT]); BEGIN SI←D; SI←SI+5; DS←3 OCT END;%                 37344000 T  0000:0
                                                                                                        37344000
                      PFACT←CALCULATEPURGE(PFACT);%                                         37345000 T  0001:3
                      STREAM(S←[MID],LABLE);%                                               37346000 T  0003:0
                      BEGIN DS←8 LIT " LABEL  "; SI←S; DS←2 WDS;%                           37347000 T  0004:1
                            DS←3 DEC; DS←5 DEC; DS←2 DEC; SI←SI+3; DS←5 CHR;%               37348000 T  0006:0
                            DS←14 LIT "0"; DS←5 DEC; SI←SI+7; DS←CHR;%                      37349000 T  0007:1
                            DS←5 DEC; DS←5 DEC; DS←11 LIT "0"%                              37350000 T  0010:0
                      END;%                                                                 37351000 T  0012:1
                                                                                                        37347000
                      IF (BSIZE←LABLE.[8:10])>10 THEN%                                      37352000 T  0012:2
                      STREAM(J←JARROW[P1MIX],D←[LABLE[10]]);%                               37353000 T  0014:2
                      BEGIN SI←J; SI←SI+1; DS←LIT " "; DS←7 CHR;%                           37354000 T  0016:2
                            SI←SI+1; DS←LIT "/"; DS←7 CHR; 12(DS←2 LIT " ");%               37355000 T  0017:3
                FND   END GUILDLABEL;%                                                      37356000 T  0019:3
                                                                                                        37354000
                                                                                                        37344000
                                                                                          SIZE= 0021 WORDS
```

```
                $ SET OMIT = PACKETS                                                                    37356999 T  0000:0
                $ SET OMIT = NOT(PACKETS)                                                               37357299 T  0000:0
               PROCEDURE FILEMESSAGE(I,K,M,F,R,D,C,TYPE);                                               37357300 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00884
                    VALUE I,K,M,F,R,D,C,TYPE;                                                           37357400 T  0000:0
                    REAL I,K,M,F,R,D,C,TYPE;                                                            37357500 T  0000:0
                $ POP OMIT                                                                              37357501 T  0000:0
               BEGIN REAL Z,L;%                                                                         37359000 T  0000:0
STACK(F+1) = Z
STACK(F+2) = L
                     L←SPACE(12);%                                                                      37360000 T  0000:0
                     STREAM(Z;I←[1],J←[JAR[P1MIX,*]],P1MIX,L);                                          37361000 T  0002:3
                     BEGIN SI←1;                                                                        37362000 T  0005:0
                           IF SC="+" THEN BEGIN TALLY←1; DS←LIT "-"; SI←SI+1 END ELSE%                  37363000 T  0005:1
                                                                                                                    37363000
                           BEGIN SI←SI+1; IF SC≠"#" THEN DS←LIT " " END;%                               37364000 T  0007:0
                                                                                                                    37364000
                           DS←7 CHR; DS←LIT " "; L←DI;%                                                 37365000 T  0008:1
                           2(DI←LOC Z; IF 8 SC≠DC THEN BEGIN DI←L; SI←SI-7; DS←7 CHR;%                   37366000 T  0009:1
                                                             DS←LIT " "; L←DI END));%                   37367000 T  0011:0
                                                                                                                    37366000
                           DI←L; SI←SI+1; DS←7 CHR; DS←LIT " "; L←DI;%                                  37368000 T  0012:0
                           3(DI←LOC Z; IF 8 SC≠DC THEN BEGIN DI←L; SI←SI-8; DS←7 DEC;                    37369000 T  0013:2
                                                             L←DI; DI←DI-7; DS←6 FILL;                  37370000 T  0015:1
                                                             DI←L; DS←LIT " "; L←DI;                    37371000 T  0016:0
                                                       END);                                            37372000 T  0017:0
                                                                                                                    37369000
                           DI←L; DI←DI-1; DS←LIT ":";%                                                  37375000 T  0017:1
                           Z←TALLY; SI←LOC Z; SI←SI+7;%                                                 37376000 T  0018:1
                           IF SC="0" THEN BEGIN SI←J; SI←SI+1; DS←7 CHR; DS←LIT "/";%                   37377000 T  0019:0
                                                SI←SI+1; DS←7 CHR; DS←LIT "=";%                         37378000 T  0020:3
                                                SI←LOC P1MIX; DS←2 DEC;                                 37379000 T  0021:3
                                                L←DI; DI←DI-2; DS←FILL; DI←L END;                       37379500 T  0022:1
                                                                                                                    37377000
                           DS←LIT "←";%                                                                 37380000 T  0023:1
                     END;%                                                                              37381000 T  0023:3
                                                                                                                    37362000
                     IF P THEN BEGIN TERMINATE(P1MIX); TERMINALMESSAGE(-L) END;%                        37382000 T  0024:0
                                                                                                                    37382000
                     SPOUTER(L,0,TYPE);                                                                 37383000 T  0026:1
               END FILEMESS;%                                                                           37384000 T  0027:2
                                                                                                                    37359000
                                                                                                        SIZE= 0028 WORDS
```

```
                PROCEDURE FILLBUFFERS(CURRENT,FINAL,COBOL,NR);                                  37385000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 00885
                      VALUE CURRENT,FINAL,COBOL,NR;                                             37385500 T  0000:0
                      REAL  CURRENT,FINAL,COBOL,NR;                                             37386000 T  0000:0
                    BEGIN ARRAY LOCAT[*];%                                                      37387000 T  0000:0
STACK(F+1) = LOCAT
                      INTEGER I,J,K,D;%                                                         37388000 T  0000:0
STACK(F+2) = I
STACK(F+3) = J
STACK(F+4) = K
STACK(F+5) = D
                      INTEGER FIRSTLOC=J,PREVLOC=K,CURLOC=D;                                    37388100 T  0000:0
STACK(F+3) = FIRSTLOC
STACK(F+4) = PREVLOC
STACK(F+5) = CURLOC
                      REAL T=LOCAT;                                                             37388200 T  0000:0
STACK(F+1) = T
                      REAL T1;                                                                  37388250 T  0000:0
STACK(F+6) = T1
                      REAL NF=T1+1;                    % MUST BE AT THE TOP OF THE STACK        37388275 T  0000:0
STACK(F+7) = NF
                      LABEL LINK;                                                               37388300 T  0000:0
                      REAL BSIZE=CURRENT,N=FINAL,U=COBOL,ALPHA=NR;                              37388400 T  0000:0
STACK(F-4) = BSIZE
STACK(F-3) = N
STACK(F-2) = U
STACK(F-1) = ALPHA
                      IF ALPHA<512 THEN                                                         37388500 T  0000:0
                      BEGIN                                                                     37388600 T  0002:1
                      P(NR=(COBOL GTR 0));              % INITIALIZE NF                         37388700 T  0002:3
                      IF COBOL THEN FINAL:=CURRENT;                                             37388800 T  0004:0
                      J←FINAL.[33:15]=K←CURRENT.[33:15];%                                       37389000 T  0005:2
                      D←2&(NOT CURRENT)[1:22:1];%                                               37390000 T  0008:1
                      LOCAT←M[K+D]; NR←NR-1;%                                                   37391000 T  0010:1
                      FOR I←1 STEP 1 UNTIL NF DO%                                               37392000 T  0013:2
                      BEGIN IOREQUEST(FLAG(FINAL),CURRENT,LOCAT);%                              37393000 T  0015:0
                            M[LOCAT]←M[LOCAT]&0[26:26:7] AND NOT(M OR IOMASK);%                 37394000 T  0016:3
                            IF NOT COBOL THEN                                                   37394025 T  0021:3
                            IF I=1 THEN IF P(FINAL.[3:5],DUP)=6 OR P(XCH)=7 THEN                37394050 T  0022:1
                        BEGIN                                                                   37394100 T  0026:2
                        SLEEP(LOCAT & 0 [3:3:30],IOMASK);                                       37394150 T  0027:0
                        STREAM(N←0,L←0:NDIV64←0,BACC←T1←FINAL.[7:1],                            37394200 T  0029:3
                               BUF ← (M[LOCAT] INX T1)-(1-T1));                                 37394250 T  0032:1
                        BEGIN   DI ← LOC N; SI ← BUF; BACC(SI ← SI+4);                          37394260 T  0035:1
                                IF 4 SC≠DC THEN GO OWT;                                         37394280 T  0036:3
                                DI ← LOC N; BACC(SI ← BUF); DS ← 4 OCT;                         37394300 T  0037:2
                                SI ← LOC L; DI ← LOC BACC; SI ← SI-2; DI ← DI-1;                37394350 T  0039:0
                                DS ← 1 CHR; SI ← BUF;                                           37394360 T  0040:0
                                CT ← CT+BACC; GO FWD;                                           37394400 T  0040:2
                                NDIV64(SI ← SI-32; SI ← SI-32); SI ← SI-N; SI ← SI+4;           37394450 T  0041:1
                                GO ON;                                                          37394460 T  0043:1
                        FWD:    NDIV64(SI ← SI+32; SI ← SI+32); SI ← SI+N;                      37394500 T  0043:2
                        ON:     DI ← LOC L; DS ← 4 OCT;                                         37394550 T  0045:1
                        OWT:                                                                    37394560 T  0045:3
                        END STREAM;                                                             37394600 T  0045:3
                                                                                                            37394260
                        T1 ← P;                                                                 37394650 T  0046:0
```

```
          IF P(DUP)=0 OR P(XCH)≠T1 THEN TERMINATE(P1MIX&108[CTF]);                    37394700 T  0046:2
          END;                                                                       37394800 T  0050:0
                                                                                                  37394100
             IF NR>0 THEN STREAM(NR,T←M[LOCAT],LOCAT);%                              37395000 T  0050:0
                          BEGIN SI←LOCAT; SI←SI+8; DS←NR WDS;%                       37396000 T  0053:3
                                SI←LOC T; DS←WDS END;%                               37397000 T  0054:3
                                                                                                  37396000
             CURRENT.[33:15]←K←M[K+D].[18:15];%                                      37398000 T  0055:2
             FINAL.[33:15]←K+J;%                                                     37399000 T  0059:0
       END   END ELSE                                                                37400000 T  0060:3
                                                                                                  37393000
                                                                                                  37388600
       BEGIN
       T←ALPHA&U[12:42:6] OR M;%                                                     37401000 T  0063:0
       FOR I←N-1 STEP -1 UNTIL 0 DO%                                                 37404000 T  0063:2
       BEGIN M[ALPHA+I]←(CURLOC←GETSPACE(BSIZE+4,2,1)+2)+2;                          37405000 T  0065:3
 $ SET OMIT = NOT(BREAKOUT)                                                          37406000 T  0070:0
             IF FIRSTLOC=0 THEN FIRSTLOC←CURLOC;%                                  37406099 T  0075:0
             M[CURLOC+1]←0; MOVE(BSIZE+1,CURLOC+1,CURLOC+2);                       37407000 T  0075:0
LINK:        M[CURLOC]←FLAG(T)&(PREVLOC+2)[18:33:15];%                             37408000 T  0077:0
             M[CURLOC+BSIZE+3]←FLAG(T)&(PREVLOC+BSIZE+1)[18:33:15];%               37412000 T  0082:0
             PREVLOC←CURLOC;%                                                      37413000 T  0084:3
       END;%                                                                       37414000 T  0089:0
                                                                                   37415000 T  0089:3
                                                                                                  37406000
       IF I=(-1) THEN BEGIN CURLOC←FIRSTLOC; GO TO LINK END;%                      37416000 T  0090:1
                                                                                                  37416000
       END END FILL OR GET BUFFERS;                                                37417000 T  0093:0
                                                                                                  37401000
                                                                                                  37387000
                                                                                        SIZE= 0094 WORDS
```

```
                    REAL PROCEDURE FILEHEADER(MID,FID,NROWS,SIZE,BLEN,RLEN,S);%              37418000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 00889
                                   VALUE    MID,FID,NROWS,SIZE,BLEN,RLEN,S;%                  37419000 T  0000:0
                                   REAL     MID,FID;%                                         37420000 T  0000:0
                                   INTEGER       NROWS,SIZE,BLEN,RLEN,S;%                     37421000 T  0000:0
                    BEGIN REAL Q,LPER,SPER; ARRAY T=Q[*];                                     37422000 T  0000:0
STACK(F+2) = Q
STACK(F+3) = LPER
STACK(F+4) = SPER
STACK(F+2) = T
                        INTEGER N1,R1,L1,W;                                                   37422100 T  0000:0
STACK(F+5) = N1
STACK(F+6) = R1
STACK(F+7) = L1
STACK(F+10) = W
                     $ SET OMIT = NOT SHAREDISK                                               37422199 T  0000:0
                        LABEL T1FILL,EXIT;                                                    37422300 T  0000:0
                        SPER+(BLEN+29) DIV 30;%                                               37424000 T  0000:0
                        IF SPER>63 THEN                                                       37424100 T  0003:3
                          FILEMESS(-"INVALID","BLOCK  ",MID,FID,RLEN,BLEN,SPER);              37424200 T  0004:2
                        IF S.[42:6]=0 THEN RLEN+BLEN;%                                        37425000 T  0007:3
                     $ SET OMIT = SHAREDISK                                                   37425499 T  0010:1
                        Q:=S.[13:3];                                                          37425500 T  0010:1
                     $ POP OMIT                                                               37425501 T  0011:2
                     $ SET OMIT = NOT SHAREDISK                                               37425599 T  0011:2
                        LPER+BLEN DIV RLEN;%                                                  37426000 T  0011:2
                        IF (NROWS+SIZE)=0 THEN%                                               37427000 T  0012:3
                      BEGIN                                                                   37428000 T  0014:0
                           IF (N1:=SECURITYCHECK(MID,FID,USERCODE[P1MIX],Q)) LSS 0 THEN       37428100 T  0014:2
                     $ SET OMIT = NOT SHAREDISK                                               37428199 T  0017:1
                                 GO TO EXIT;                                                  37428300 T  0017:1
                     $ SET OMIT = NOT SHAREDISK                                               37428399 T  0017:3
                           T:=N1&P(.T,LOD,XCH)[CTF];                                          37429000 T  0017:3
                     $ SET OMIT = NOT SHAREDISK                                               37429099 T  0019:2
                              N1+T[7]+1;                                                      37430000 T  0019:2
                                 IF(L1+T[0].[1:14])=0 THEN L1+30;                             37431000 T  0021:0
                              R1+T[0].[30:12];                                                37432000 T  0024:1
                              W +N1 DIV R1 × T[0].[42:6]×30 +N1 MOD R1×L1;                    37433000 T  0025:3
                              T[7]+ W+ W DIV 30 DIV SPER×LPER                                 37434000 T  0030:1
                                     +(W DIV 30 MOD SPER×30 + W MOD 30 + RLEN-1)              37435000 T  0032:0
                                          DIV RLEN-1;                                         37436000 T  0036:0
                    T1FILL:       T[1]+(T[8] DIV SPER)× SPER;                                 37437000 T  0038:2
                              T[4]:=(*P(DUP))&0[11:47:1] OR 1;                                37437500 T  0041:0
                        END ELSE%                                                             37439000 T  0044:0
                                                                                                            37428000
                     $ SET OMIT = SHAREDISK                                                   37439999 T  0044:0
                        BEGIN T:=M OR (GETSPACE(30,8,1)+@360000700002);                       37440000 T  0044:0
                              STREAM(T); BEGIN 60(DS+4 LIT "0") END;%                         37441000 T  0049:3
                                                                                                            37441000
                     $ POP OMIT                                                               37441001 T  0052:1
                     $ SET OMIT = NOT SHAREDISK                                               37441099 T  0052:1
                              T[3]+XCLOCK+P(RTR);                                             37441500 T  0052:1
                              T[7] + -1;                                                      37442000 T  0054:0
                              T[1]:=T[8]:=((SIZE+(LPER-1))DIV LPER)× SPER;                    37443000 T  0055:2
                              T[9] + NROWS;                                                   37444000 T  0059:3
                        END;%                                                                 37445000 T  0061:0
                                                                                                            37440000
```

```
      T[0] ←SPFR&LPFR[30:36:12]&BLEN[15:33:15]&RLEN[1:34:14];          37446000 T  0061:0
      FILEHEADER ← NFLAG(T);                                           37447000 T  0065:1
EXIT:                                                                  37447500 T  0066:2
END FILEHEADER;%                                                       37448000 T  0066:2
                                                                                      37422000
                                                                                SIZE= 0068 WORDS
```

```
                PROCEDURE PURGFIT(U); VALUE U; INTEGER U;%                                                    37449000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00892
                BEGIN ARRAY LABLE=+1[*];%                                                                     37450000 T  0000:0
STACK(F+1) = LABLE
                REAL RCW=+0,EOF=+2;%                                                                          37451000 T  0000:0
STACK(F+0) = RCW
STACK(F+2) = EOF
                REAL MSCW=-2;                                                                                 37451500 T  0000:0
STACK(F-2) = MSCW
                P(0,0);                                                                                       37453000 T  0000:0
                P(WAITIO(@4200000000,@377,U),DEL);                                                            37453100 T  0000:2
                LABLE←[M[SPACE(10)]]&10[8:38:10]&5[21:45:3];%                                                 37454000 T  0002:0
                BUILDLABEL(LABLE,0,"X",1,0,1,0,PRNTABLE[U].[30:18],0,0,0);%                                   37455000 T  0006:3
                P(WAITIO(LABLE,@37700000,U),DEL);%                                                            37456000 T  0011:0
                EOF←@1737000000000000;%                                                                       37457000 T  0012:3
                P(WAITIO([EOF],@37700000,U),DEL);%                                                            37458000 T  0013:2
                FORGETSPACE(LABLE.[33:15]);                                                                   37463000 T  0015:0
                SETNOTINUSE(U,0);                                                                             37464000 T  0016:2
                KILL(TMSCW]);                                                                                 37465000 T  0017:2
            END PURGEIT;%                                                                                     37466000 T  0018:1
                                                                                                                       37450000
                                                                                                            SIZE= 0022 WORDS
```

```
                    PROCEDURE KRUNCHER(H); ARRAY H[*];                                  37500000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00893
PRT(674) = KRUNCHER
                         BEGIN DEFINE E=H[7]#,RL=H[1]#,RPB=H[0],[30:12]#,               37501000 T  0000:0
                                    MAXROWS=H[9]#,                                      37501500 T  0000:0
                                    BCL=H[0],[42:6]#,BRL=H[8]#;                         37502000 T  0000:0
                               ARRAY A[*];                                              37504000 T  0000:0
STACK(F+1) = A
                               LABEL FORGET,EXIT,AGAIN,DONE;                            37505000 T  0000:0
                               INTEGER NB,NBR;                                          37506000 T  0000:0
STACK(F+2) = NB
STACK(F+3) = NBR
                               REAL I,J,K,T;                                            37507000 T  0000:0
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = K
STACK(F+7) = T
                               A:=[MYSPACE(41)]]&40[8:38:10];                           37508000 T  0000:0
                               MOVE(41,A.[CF]-1,A);                                     37509000 T  0005:2
                               IF E LSS 0 THEN GO TO EXIT;                              37510000 T  0008:2
                               NB:=E DIV RPB;                                           37511000 T  0010:0
                               NBR:=RL DIV BCL;                                         37512000 T  0012:1
                               IF RL NEQ BRL THEN                                       37513000 T  0014:2
                               FOR I:=10 STEP 1 UNTIL 29 DO                             37514000 T  0015:3
                               IF H[I] NEQ 0 THEN                                       37515000 T  0017:0
                    $ SET OMIT = SHAREDISK                                              37515995 T  0018:0
                                    FORGETUSERDISK(H[I]+RL,BRL-RL);                     37516000 T  0018:0
                    $ SET OMIT = NOT SHAREDISK                                          37516050 T  0023:3
                               BRL:=RL;                                                 37517000 T  0023:3
                               IF NB LSS NBR THEN                                       37520000 T  0025:1
                               BEGIN A[0]:=H[NT2:=10];                                  37521000 T  0026:0
                                    NT4:=1;                                             37521100 T  0028:2
                                    RL:=(NB+1)xBCL;                                     37521200 T  0029:1
                                    GO TO FORGET;                                       37521300 T  0032:1
                               END;                                                     37521400 T  0032:3
                                                                                                    37521000
                               T:=(K:=J:=1)+NBRx20;                                     37522000 T  0032:3
AGAIN:                         IF(NT1:=NBR DIV J)=0 THEN GO TO DONE;                    37523000 T  0035:2
                               IF (NT2:=NB DIV NT1) GTR 19 THEN GO TO DONE;             37524000 T  0037:3
                               IF NBR MOD J=0 THEN                                      37525000 T  0040:0
                               BEGIN IF (NT3:=NT1xNT2+NT1) LSS T THEN                   37526000 T  0041:1
                                    BEGIN K:=J; T:=NT3; NT4:=NT2+1 END;                 37527000 T  0044:0
                                                                                                    37527000
                               END;                                                     37528000 T  0047:1
                                                                                                    37526000
                               J:=J+1;                                                  37529000 T  0047:1
                               GO TO AGAIN;                                             37530000 T  0048:2
DONE:                          IF K=1 THEN GO TO EXIT;                                  37530100 T  0049:0
                               NT2:=NB DIV NBR + 10;                                    37530200 T  0050:1
                               RL:=RL DIV K;                                            37531000 T  0052:0
                               FOR I:=10 STEP 1 UNTIL NT2 DO                            37532000 T  0054:0
                               BEGIN IF (NT1:=H[I]-RL) GTR 0 THEN                       37533000 T  0055:0
                                    FOR J:=1 STEP 1 UNTIL K DO                          37534000 T  0057:1
                                         A[(I-10)xK+J-1]:=NT1+JxRL;                     37535000 T  0059:0
                               END;                                                     37536000 T  0065:3
                                                                                                    37533000
                               FOR K:=NT4 STEP 1 UNTIL 19 DO A[K]:=0;                   37538000 T  0068:0
```

```
                IF MAXROWS LSS (NT5:=(NT4#20)+NT4) THEN MAXROWS:=NT5;
   FORGET:      IF NB+1 NEQ NBR THEN
$ SET OMIT = SHAREDISK
                     FORGETUSERDISK(A[NT4-1]+RL,(NT2-9)*BRL-NT4*RL);
$ SET OMIT = NOT SHAREDISK
                MOVE(20,A,[H:10]]);
                BRL:=RL;
   EXIT:        FORGETSPACE(A);
        END;
```

```
37538500 T  0072:2
37539000 T  0076:3
37541995 T  0078:0
37542000 T  0078:0
37542005 T  0083:2
37543000 T  0083:2
37544000 T  0085:2
37545000 T  0087:0
37546000 T  0088:0
                    37501000
          SIZE= 0089 WORDS
```

```
                PROCEDURE DISKFILEOPEN(ALPHA); VALUE ALPHA; INTEGER ALPHA;                                  38000000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00896
PRT(675) = DISKFILEOPEN
                BEGIN REAL RCW=+0,MSCW=-2;                                                                 38001000 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                        REAL IOM=IOMASK,IOMASK=+1;                                                         38002000 T  0000:0
PRT(362) = IOM
STACK(F+1) = IOMASK
                        INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,                       38003000 T  0000:0
STACK(F+2) = NBUFS
STACK(F+3) = FNUM
STACK(F+4) = RLEN
STACK(F+5) = TYPE
STACK(F+6) = IO
STACK(F+7) = BLEN
STACK(F+10) = U
                                KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,                            38004000 T  0000:0
STACK(F+11) = KIND
STACK(F+12) = MODE
STACK(F+13) = DIREC
STACK(F+14) = FORMS
STACK(F+15) = COBOL
                                UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                                     38005000 T  0000:0
STACK(F+16) = UNLABELED
STACK(F+17) = OPTIONAL
STACK(F+20) = CNTCTL
                        REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                                             38006000 T  0000:0
STACK(F+21) = T1
STACK(F+22) = T2
STACK(F+23) = MASK
STACK(F+24) = STATE
                        REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;                       38007000 T  0000:0
STACK(F+25) = MFID
STACK(F+26) = FID
STACK(F+27) = REEL
STACK(F+30) = CDATE
STACK(F+31) = CYCLE
                        ARRAY FIB=+26[*],FPB=+27[*];%                                                      38008000 T  0000:0
STACK(F+32) = FIB
STACK(F+33) = FPB
                        INTEGER ACCESS=+28,FIB7=+29;                                                       38009000 T  0000:0
STACK(F+34) = ACCESS
STACK(F+35) = FIB7
                        LABEL AGN,EXIT;                                                                    38009100 T  0000:0
                        ARRAY HEADER=+30[*];%                                                              38010000 T  0000:0
STACK(F+36) = HEADER
                        REAL TOG=+31;%                                                                     38010100 T  0000:0
STACK(F+37) = TOG
                        SUBROUTINE DISKSETUP;%                                                             38011000 T  0000:0
                         BEGIN IF STATE.[42:1] THEN%                                                       38012000 T  0001:0
                            BEGIN                                                                          38013000 T  0001:3
                                 IF MFID=0 AND USERCODE[P1MIX] ≠ 0 THEN                %126-               38013010 C  0002:1
                                      BEGIN                                            %126-               38013020 C  0004:1
                                      FPB[FNUM  ]:=MFID:=FID;                          %126-               38013030 C  0004:3
                                      FPB[FNUM+1]:=FID :=USERCODE[P1MIX];              %126-               38013040 C  0006:2
                                      END;                                             %126-               38013050 C  0009:0
```

```
                IF NFLAG(FIB[14]+FLAG(FILEHEADER(MFID                                  38013100 T  0009:0
$ SET OMIT = NOT SHAREDISK                                                             38013199 T  0009:3
                    ,FID&FIB[5][1:45:1],FIB[8],[20:5]                                  38013300 T  0009:3
                    ,FIB[8],[25:23],BLEN,RLEN,STATE)))<6 THEN                          38013400 T  0011:3
                BEGIN P(DEL);                                                          38013500 T  0016:0
                    TOG:= 1;                                                           38013510 T  0016:3
$ SET OMIT = NOT SHAREDISK                                                             38013519 T  0017:2
                    GO TO EXIT;                                                        38013600 T  0017:2
                END;                                                                   38013700 T  0018:0
                                                                                                   38013500
                IF FIB[8].[20:28]≠0 THEN FPB[FNUM+2],[18:30]←DATE ELSE                 38013900 T  0018:0
                  BEGIN% OLD FILE,VERIFY LABEL EQUATION DATE IF ANY                    38014000 T  0023:0
                      HEADER := FIB[14];%                                              38014100 T  0023:2
                      STREAM(H:=HEADER[3],[30:18],B:=[T2]);                            38014200 T  0024:2
                      BEGIN SI:=LOC H; DS:=8 DEC; END;%                                38014300 T  0026:1
                                                                                                   38014300
                  AGN: IF CDATE NEQ 0 AND CDATE NEQ HEADER[3].[30:18] THEN             38014400 T  0027:0
                      BEGIN% WRITE DATE CHECK MESSAGE                                  38014500 T  0028:1
          DOLITTLE(FALSE,                                                              38014600 T  0030:0
                    VWY&VOF[36:42:6]&VOK[30:42:6],                                     38014610 T  0030:2
          "*DAT CK"," =00000"&T2[18:18:30],MFID);                                      38014620 T  0032:3
                        IF TERMSET(P1MIX) THEN                                         38014700 T  0034:3
                        BEGIN                                                          38014800 T  0036:1
                            FORGETSPACE(DIRECTORYSEARCH(MFID,FID,                      38014900 T  0036:3
$ SET OMIT = NOT SHAREDISK                                                             38014949 T  0037:3
                                        FIB[5],[13:3]+10));                            38015000 T  0037:3
                            GO TO INITIATE;                                            38015100 T  0039:3
                        END;%                                                          38015200 T  0040:1
                                                                                                   38014800
                            IF P(NT6,DUP)=VOK OR P(XCH)=VOF THEN CDATE←0;              38015400 T  0040:1
                            GO AGN                                                     38015500 T  0043:2
                      END;% VERIFICATION                                               38015600 T  0044:0
                                                                                                   38014500
                        FPB[FNUM+2],[18:30]:=T2;% BCL DATE                             38015700 T  0046:0
                    END OLD FILES;%                                                    38015800 T  0049:0
                                                                                                   38014000
                    STARTIMING(FNUM,18);%                                              38015900 T  0049:0
                    FPB:=PRT[P1MIX,3];      % STARTIMING MOVES THE FPB                 38015950 T  0050:0
                END;%                                                                  38016000 T  0051:2
                                                                                                   38013000
                HEADER←FIB[14];%                                                       38020000 T  0051:2
                KIND←4; U←18;%                                                         38021000 T  0052:2
                MODE←0;%                                                               38022000 T  0054:0
                IF NOT COBOL THEN UNLABELED←1;%                                        38023000 T  0054:3
                CNTCTL←BLEN≤1023;%                                                     38024000 T  0056:2
$ SET OMIT = NOT SHAREDISK                                                             38024004 T  0057:3
            IF COBOL>0 AND (FIB[13].[22:1] OR TYPE=10 OR TYPE=26) THEN                 38024100 T  0057:3
            BEGIN     COBOL:=3;                 %IF COBOL=IO OR COBOL=RANDOM           38024200 T  0061:3
                      BLEN := BLEN + RLEN;      % THEN CHANGE BUFFSIZE TO              38024300 T  0063:0
            END;                                %  BUFFSIZE + RECSIZE                  38024400 T  0064:1
                                                                                                   38024200
                GETBUFFERS((IF CNTCTL THEN BLEN%                                       38025000 T  0064:1
                                      ELSE ((BLEN+29) DIV 30)×30)+1,%                  38026000 T  0065:1
                        NBUFS,U,ALPHA);%                                               38027000 T  0068:1
                IF COBOL = 3 THEN                 %IF COBOL=IO OR COBOL=RANDOM         38027100 T  0069:1
            BEGIN     COBOL := 1;               % THEN CHANGE BUFFSIZE TO             38027200 T  0070:0
```

```
                BLEN := BLEN - RLEN;    % BUFFSIZE - RECSIZE                    38027300 T  0071:1
          END;                          % (SEE ABOVE                            38027400 T  0072:2
                                                                                             38027200
            FIB[16]←M[ALPHA]&CNTCTL[23:47:1]&I0[24:47:1]%                        38028000 T  0072:2
                  &((BLEN+29) DIV 30)[27:42:6]%
                  &(IF CNTCTL THEN BLEN ELSE 1023)[8:38:10]%                     38029000 T  0075:1
                  &TINU[18][3:3:5] OR M OR I0MASK;%                              38030000 T  0077:1
            FIB[16].[2:1]:=(HEADER.[31:2] AND (I0+1))≠0;                         38031000 T  0079:3
               FIB[5].[1:1]:= NOT FIB[16].[2:1];                                 38032000 T  0083:1
               IF FIB[5].[1:1] THEN                                              38033000 T  0088:0
           FOR MASK:=10 STEP 1 UNTIL 29 DO HEADER[MASK]:=0;                      38034000 T  0091:2
            FIB[19]←(IF DIREC THEN BLEN-RLEN+1 ELSE 1)                           38035000 T  0092:2
                    INX FIB[16]&0[27:27:6];                                      38036000 T  0097:2
            IF STATE.[46:2]≠0 THEN FIB[19].[8:10]←RLEN;%                         38037000 T  0100:3
            FS[P1MIX,(T2:=(FNUM DIV ETRLNG)).[40:4]]←(*P(DUP)) OR                38038000 T  0103:0
              (TWO(0&T2[43:44:4])×((NOT HEADER).[31:2]));                        38039000 T  0107:1
            T2←IF COBOL THEN 0 ELSE FIB[19].[33:15]-FIB[16].[33:15];             38040000 T  0110:1
               FIB[10].[3:15]:=M[ALPHA]-2;   %HEAD OF BUFFER RING                38041000 T  0114:1
            FOR MASK←0 STEP 1 UNTIL NBUFS-1 DO%                                  38041100 T  0118:2
            M[ALPHA+MASK]←(P(DUP,LOD)+T2)%                                       38042000 T  0122:1
                          &P(FLAG(FIB[19-ABS(3×COBOL)]),XCH)[CTC];               38043000 T  0126:2
            FIB[16]:=FIB[16] OR M;                                               38044000 T  0128:3
            FIB[5].[45:1]←0;                                                     38045000 T  0132:1
            IF P([FIB[14]],LOD).[FF]=2 THEN FIB[5].[11:2]←1;%INPUT ONLY.         38045100 T  0134:1
            IF HEADER[4].[10:1] AND NOT I0 THEN                                  38045105 T  0136:3
              FILEMESS(="CODE    ","FILE    ",MFID,FID,0,0,0);                   38045110 T  0141:2
$ SET OMIT = NOT(PACKETS)                                                        38045120 T  0143:1
              IF PSEUDOMIX[P1MIX]≠0 THEN                                         38045149 T  0146:2
              IF NOT FIB[5].[41:1] THEN                                          38045150 T  0146:2
              FILEMESSAGE((IF I0 THEN " IN " ELSE " OUT")                        38045155 T  0147:2
              &TINU[U][6:30:18], IF ACCESS=0 THEN " SER   "                      38045160 T  0149:1
              ELSE IF ACCESS=1 THEN IF TYPE=26 THEN " PRO   "                    38045200 T  0151:3
              ELSE " RDM   " ELSE " UPD   ",                                     38045300 T  0154:2
              MFID,FID,0,0,0,64);                                                38045310 T  0157:3
$ POP OMIT                                                                       38045400 T  0159:1
          END DISKSETUP;%                                                        38045501 T  0161:0
                                                                                 38046000 T  0161:0
                                                                                             38012000
          P(RCW,MSCW,STF);                                                       38047000 T  0170:0
          RCW:=RCW&P(XCH)[CTC];                                                  38048000 T  0171:0
          DISKSETUP;                                                             38049000 T  0172:1
          IF COBOL<0 THEN   % ADJUST UPPER BOUND FOR COBOL 68                    38049200 T  0173:0
             BEGIN  MASK ← (IF I0 AND NOT FIB[13].[22:1]                         38049300 T  0173:3
                       THEN HEADER[7]                                            38049400 T  0174:3
                       ELSE  (((HEADER[9] × HEADER[1]) DIV                       38049500 T  0176:3
                              HEADER[0].[42:6]) × HEADER[0].[30:12]) - 1);       38049600 T  0178:3
             IF FIB[3]=0 OR FIB[3]>MASK THEN FIB[3]←MASK; %LESSOR OF 2 EVILS     38049700 T  0181:3
             END;                                                                38049800 T  0186:1
                                                                                             38049300
          IF P(TYPE,DUP)=10 OR P(XCH)=26 THEN                                    38050000 T  0186:1
          BEGIN                                                                  38051000 T  0188:1
               IF COBOL<1 THEN      % ALGOL OR COBOL 68                        38052000 T  0188:3
                  FOR MASK ← 0 STEP 1 UNTIL NBUFS-1 DO                           38053000 T  0189:2
                  IF COBOL THEN M[M[ALPHA+MASK] INX NOT 2] ← NOT 0               38053500 T  0194:1
                           ELSE M[ALPHA+MASK]←P(DUP,LOD)&1[27:47:1];             38054000 T  0197:3
                 FIB[6]←FIB[7]←0;%                                               38055000 T  0203:0
                 FIB[17]←IF I0 THEN 0 ELSE BLEN;%                                38056000 T  0205:1
          END ELSE                                                               38057000 T  0208:0
```

```
                                                                                                            38051000
BEGIN                                                                                       38058000 T  0208:0
         T2←(MFID←FIB[16]).[33:15];%                                                        38059000 T  0208:2
         FIB7←FIB[7];                                                                       38060000 T  0210:2
         IF COBOL THEN%                                                                     38061000 T  0211:2
          BEGIN  IF COBOL>0 THEN                                                            38062000 T  0211:3
                      IF NOT (FIB7=0 OR FIB[13].[22:1]) THEN                                38062500 T  0213:0
                      BEGIN  FIB7 ← FIB7 - 1;                                               38063000 T  0215:3
                             OPTIONAL ← NBUFS - 1;                                          38063500 T  0217:2
                      END ELSE  OPTIONAL ← NBUFS - 2                                        38064000 T  0218:3
                                                                                                            38063000
                      ELSE BEGIN       % COBOL 68                                           38064200 T  0219:2
                           OPTIONAL ← NBUFS - 1;                                            38064400 T  0221:0
                           IF DIREC THEN FIB7 ← FIB[7] ← FIB[3];                            38064600 T  0222:1
                           END;                                                             38065000 T  0225:0
                                                                                                            38064200
               FID←FIB[16];%                                                                38066000 T  0225:0
               MASK←0;%                                                                     38067000 T  0226:0
         END ELSE%                                                                          38068000 T  0226:3
                                                                                                            38062000
         BEGIN OPTIONAL←NBUFS-1;%                                                           38069000 T  0226:3
               MASK←(FID←FIB[19]).[33:15]-T2;%                                              38070000 T  0228:2
         END;%                                                                              38071000 T  0231:0
                                                                                                            38069000
         IF (STATE.[46:2]≠0 AND NOT COBOL) OR IO THEN                                       38072000 T  0231:0
         IF M[ALPHA].[2:1] THEN                                                             38073000 T  0233:2
         FOR T1←0 STEP 1 UNTIL OPTIONAL DO%                                                 38074000 T  0235:2
         BEGIN IF (M[T2]:=                                                                  38074500 T  0237:0
                 DISKADDRESS(FPB[FNUM], FPB[FNUM+1], FPB[FNUM+3],                           38075000 T  0237:3
                 FORMS:=((HEADER[0].[30:12]×T1)&DIREC[1:47:1])+FIB7,                        38075500 T  0240:2
                 HEADER, IO&(NOT HEADER[4])[46:47:1])) > 1 THEN                             38076000 T  0243:0
               BEGIN                                                                        38076500 T  0247:2
                      IF (USERCODE[P1MIX] EQV MCP)≠NOT 0 THEN                               38077000 T  0248:0
                      IF P(M[MFID],DUP).[3:6]=0 AND                                         38077500 T  0250:2
                        P(XCH)<DIRDSK×DSKTOG THEN                                           38078000 T  0253:1
                      BEGIN                                                                 38078500 T  0255:1
                           TERMINATE(P1MIX);                                                38079000 T  0255:3
                           TERMINALMESSAGE(30);                                             38079500 T  0256:2
                      END;                                                                  38080000 T  0257:1
                                                                                                            38078500
                      IOREQUEST(FLAG(FID),MFID&1[24:47:1],M[T2-2]);                         38080500 T  0257:1
                      M[ALPHA]:=FLAG(MFID)&0[26:26:7] AND NOT                               38081000 T  0261:0
                        (M OR IOMASK);                                                      38081250 T  0263:1
               END ELSE                                                                     38081500 T  0265:0
                                                                                                            38076500
               IF M[T2]=0 THEN      % EOF IF INPUT, FULL HDR IF OUTPT                       38081750 T  0265:0
                 M[ALPHA]:=P(DUP,LOD)&1[27:47:1] AND NOT M;                                 38082000 T  0267:0
               IF COBOL<0 THEN M[M[ALPHA] INX NOT 2] ←                                      38082400 T  0271:0
                  (IF FORMS≥0 THEN FORMS DIV FIB[11] ELSE NOT 0);                           38082500 T  0274:2
               STREAM(N←NBUFS-1,T←M[ALPHA],ALPHA);%                                         38083000 T  0278:1
               BEGIN SI←ALPHA; SI←SI+8; DS←N WDS;%                                          38084000 T  0280:3
                     SI←LOC T; DS←WDS;%                                                     38085000 T  0281:3
               END;%                                                                        38086000 T  0282:1
                                                                                                            38084000
             MFID.[33:15]←T2←M[T2-2].[18:15];%                                              38087000 T  0282:2
              FID.[33:15]←T2+MASK;%                                                         38088000 T  0286:0
         END;%                                                                              38089000 T  0287:3
```

```
                                                                                                                38074500
                IF (NBUFS-1)≠OPTIONAL THEN FIB[16].[33:15]←M[ALPHA] ;%                                          38090000 T  0290:0
                FORMS←(FORMS←FIB7 MOD HEADER[0].[30:12])×RLEN;                                                  38091000 T  0294:2
               SLEEP([M[ALPHA]],[0MASK);%                                                                       38092000 T  0297:2
                IF COBOL ≥ 0 THEN           % NOT COBOL 68                                                       38092900 T  0299:2
                 IF FIB[13].[22:1]THEN M[ALPHA].[33:15]←FIB[16]INX 1 ELSE                                       38093000 T  0300:1
                M[ALPHA].[33:15]←FIB[16].[33:15]+FORMS+1;%                                                      38094000 T  0305:1
                 IF (NBUFS-1)≠OPTIONAL AND IO AND NOT FIB[13].[22:1] THEN                                       38095000 T  0309:3
                      FIB[ 17 ]←0  ELSE                                                                         38096000 T  0313:0
                FIB[17]←IF DIREC THEN FORMS+RLEN%                                                               38097000 T  0314:3
                                  ELSE BLEN-FORMS;%                                                             38098000 T  0316:3
      END;                                                                                                      38099000 T  0319:0
                                                                                                                38058000
EXIT:                                                                                                           38099100 T  0319:0
      P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                                                                   38100000 T  0319:0
END DISKFILEOPEN;                                                                                               38101000 T  0321:2
                                                                                                                38001000
                                                                                                              SIZE= 0322 WORDS
```

```
                PROCEDURE OTHERFILEOPENIN(ALPHA); VALUE ALPHA; INTEGER ALPHA;                    38102000 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 00907
PRT(676) = OTHERFILEOPENIN
                BEGIN REAL RCW=+0,MSCW=-2;                                                      38102100 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                      REAL IOM=IOMASK, IOMASK=+1;                                               38102200 T  0000:0
PRT(362) = IOM
STACK(F+1) = IOMASK
                      INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,              38102300 T  0000:0
STACK(F+2) = NBUFS
STACK(F+3) = FNUM
STACK(F+4) = RLEN
STACK(F+5) = TYPE
STACK(F+6) = IO
STACK(F+7) = BLEN
STACK(F+10) = U
                           KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,                      38102400 T  0000:0
STACK(F+11) = KIND
STACK(F+12) = MODE
STACK(F+13) = DIREC
STACK(F+14) = FORMS
STACK(F+15) = COBOL
                           UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                               38102500 T  0000:0
STACK(F+16) = UNLABELED
STACK(F+17) = OPTIONAL
STACK(F+20) = CNTCTL
                      REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                                    38102600 T  0000:0
STACK(F+21) = T1
STACK(F+22) = T2
STACK(F+23) = MASK
STACK(F+24) = STATE
                      REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;              38102700 T  0000:0
STACK(F+25) = MFID
STACK(F+26) = FID
STACK(F+27) = REEL
STACK(F+30) = CDATE
STACK(F+31) = CYCLE
                      ARRAY FIB=+26[*],FPB=+27[*];%                                             38102800 T  0000:0
STACK(F+32) = FIB
STACK(F+33) = FPB
                      INTEGER ACCESS=+28,FIB7=+29;                                              38102900 T  0000:0
STACK(F+34) = ACCESS
STACK(F+35) = FIB7
                      ARRAY HEADER=+30[*];%                                                     38103000 T  0000:0
STACK(F+36) = HEADER
                       REAL TOG=+31;                                                            38103100 T  0000:0
STACK(F+37) = TOG
                      REAL USASI=NT1, RHEAD=HEADER;                                             38103200 T  0000:0
PRT(160) = USASI
STACK(F+36) = RHEAD
                      LABEL FIND,DCN,DC19;                                                      38103300 T  0000:0
                      SUBROUTINE TYPEOPEN;%                                                     38103400 T  0000:0
                          BEGIN                                                                 38103500 T  0001:0
                             T1:=(OPNMESS AND ((T1:=JAR[P1MIX,0])>0 OR                          38103600 T  0001:0
                                COPNMESS AND T1<0));                                            38103700 T  0003:3
                   $ SET OMIT = PACKETS                                                         38103800 T  0006:2
```

```
                BEGIN NT2:=0;                                                    38104100 T  0006:2
                     IF U<16 THEN                                                38104200 T  0007:1
                     STREAM(S:=PRNTABLE[U],[30:18], D:=[NT2]);                   38104300 T  0008:0
                       BEGIN SI ← LOC S; DS ← 8 DEC;                 %           38104400 T  0010:1
                             DI ← DI-7; DS ← 6 FILL;                 %           38104500 T  0010:3
                       END;                                          %           38104600 T  0011:1
                                                                                                38104400
                     FILEMESSAGE((" IN ")&                                       38104700 T  0011:2
                       TINU[U][6:30:18], NT2, FPB[FNUM], FPB[FNUM+1],            38104800 T  0012:0
                       IF KIND=2 OR KIND=9 THEN P(REEL,CDATE) ELSE               38104900 T  0015:0
                       P(0,0), P, CYCLE, T1);                                    38105000 T  0018:1
                END;                                                             38105100 T  0019:2
                                                                                                38104100
    END;                                                                         38105200 T  0019:2
                                                                                                38103500
SUBROUTINE REED;%                                                                38105300 T  0021:0
 BEGIN IF (T2←WAITIO(T1,(MASK OR @40)&@377[CTF],U) AND @367)≠0 THEN              38105400 T  0021:0
       IF (T2 AND NOT MASK)≠0 THEN                                               38105500 T  0024:2
       BEGIN STOPTIMING(FNUM,1023); BLASTQ(U); SETNOTINUSE(U,0);                 38105600 T  0026:3
             FILEMESS(-"PARITY ","ON ... "&TINU[U][24:30:18],%                   38105700 T  0030:0
                   MFID,FID,REEL,CDATE,CYCLE);%                                38105800 T  0030:0
       END;%                                                                     38105900 T  0034:0
                                                                                                38105600
       IF TERMSET(P1MIX) THEN                                                    38106000 T  0034:0
       BEGIN STOPTIMING(FNUM,1023); SETNOTINUSE(U,0);                            38106100 T  0035:2
             GO TO INITIATE;                                                     38106200 T  0038:0
       END;                                                                      38106300 T  0038:2
                                                                                                38106100
 END REED;%                                                                      38106400 T  0038:2
                                                                                                38105400
REAL SUBROUTINE CNTLBITS;%                                                       38106500 T  0041:0
       CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1]              38106600 T  0041:0
             &IO[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]                38106700 T  0043:2
             &(IF KIND=1OR KIND=7OR KIND=12THEN@20ELSE 0)[27:42:6];              38106800 T  0048:0
SUBROUTINE LABELAREA;%                                                           38106900 T  0053:0
       M[T1:=ALPHA-2]:=M OR (GETSPACE((T1:=M[T1],SIZE)+4,      %167-             38107000 P  0055:0
                     LABELAREAV,1)+4) & T1[SIZE] & CNTLBITS[FTF];                38107100 P  0059:3
 P(ALPHA); % DETERMINE IF BRANCH TO DC19                                         38109000 T  0063:0
 P(RCW,MSCW,STF);                                                                38110000 T  0065:1
 RCW:=RCW&P(XCH)[CTC];                                                           38110500 T  0066:1
 IF P=2 THEN GO DC19;                                                            38111000 T  0067:2
 IF STATE.[41:1] THEN%                                                           38111500 T  0068:2
 BEGIN U←FIB[15].[25:5];%                                                        38112000 T  0069:1
 END ELSE%                                                                       38112500 T  0071:1
                                                                                                38112000
 BEGIN IF (U←FINDINPUT(MFID,FID,REEL,CDATE,CYCLE,COBOL,UNLABELED,                38113000 T  0071:1
                     OPTIONAL,MODE,FNUM))<0 THEN%                                38113500 T  0073:3
       BEGIN FIB[5].[39:4]←9; GO TO FIND END;%                                   38114000 T  0075:3
                                                                                                38114000
       STARTIMING(FNUM,IF U>31 THEN 18 ELSE U);                                  38114500 T  0079:1
       FPB:=PRT[P1MIX,3];          % STARTIMING MAY HAVE MOVED IT.                38115000 T  0082:1
       KIND:=IF U GTR 31 THEN 11 ELSE UNIT[U].[1:4];                             38115100 T  0083:3
       TYPEOPEN;%                                                                38115500 T  0087:1
       IF U<16 THEN BEGIN RRRMECH←TWO(U) OR RRRMECH;                             38116000 T  0088:0
                          PRNTABLE[U].[15:15]←ALPHA;%                            38116500 T  0091:0
                    END;%                                                        38117000 T  0093:2
                                                                                                38116000
%                                                                        TGW     38117500 T  0093:2
```

```
      IF (T1←RDCTABLE[U].[14:10])≠0 THEN REEL←T1;                          38118000 T  0093:2
      STATF.[39:4]←0;%                                                     38118500 T  0096:3
END;%                                                                      38119000 T  0098:2
                                                                                    38113000
IF KIND=0 THEN%                                                            38119500 T  0098:2
BEGIN IF U=23 THEN BEGIN T1←READERA; READERA←0 END%                        38120000 T  0099:1
                                                                                    38120000
              ELSE BEGIN T1←READERB; READERB←0 END;%                       38120500 T  0102:2
                                                                                    38120500
      M[ALPHA=2]:=[M[T1]]&10[8:38:10]&1[24:47:1];%                         38121000 T  0104:2
      M[T1-4]:=P(DUP,LOD)&R1MIX[AREAMIXF]&LABELAREAV[AREATYPEF];%          38121500 P  0109:0
      IF MODE != (MODE=0) AND BLEN=20 THEN                      %301-      38122000 P  0113:1
         SAVEWORD:=SAVEWORD OR TWO(U);                          %301-      38122100 C  0115:2
      CNTCTL:=DIREC:=0;%                                                   38122500 T  0117:3
      IF BLEN<T1←(MODE+1)×10 THEN BLEN←T1;%                                38123000 T  0119:0
END ELSE%                                                                  38123500 T  0122:2
                                                                                    38120000
IF KIND=2 THEN%                                                            38124000 T  0122:2
BEGIN IF NOT UNLABELED THEN BEGIN%                                         38124500 T  0123:3
      IF DIREC AND NOT FIB[16].[22:1] THEN                                 38125000 T  0125:1
      BEGIN IF NOT STATF.[40:1] THEN BEGIN%                                38125500 T  0127:0
            T1←5&3[23:46:2] OR M;%                                         38126000 T  0129:0
            MASK←0; REED;%                                                 38126500 T  0131:1
            MASK:=@60; DO REED UNTIL T2.[42:1];                            38127000 T  0133:0
            DO REED UNTIL T2.[42:1];                                       38127500 T  0136:1
            MASK←0; REED;              END;%                               38128000 T  0138:1
                                                                                    38125500
      END;                                                                 38128500 T  0140:0
                                                                                    38125500
CNTCTL←1; LABELAREA;%                                                      38129000 T  0140:0
T1:=NFLAG(M[ALPHA=2]);%                                                    38129500 T  0142:0
IF DIREC THEN T1:=T1.[8:10]=1 INX T1;%                                     38130000 T  0144:1
MASK:=@40; REED;                                                           38130500 T  0147:1
STREAM(Y:=0;X:=0,X1:=0,X2:=0,Z:=T1);                                       38131000 T  0149:0
  BEGIN  DI:=LOC X; DS:=24 LIT "VOL1HDR1HDR2E0F1E0F2E0V1";                 38131500 T  0151:0
         DI:=LOC X;                                                        38132000 T  0154:2
         6(TALLY:=TALLY+1;                                                 38132500 T  0154:3
         SI:=Z;                                                            38133000 T  0155:1
         IF 4 SC=DC THEN                                                   38133500 T  0155:2
         JUMP OUT TO B);                                                   38134000 T  0156:0
         TALLY:=0;                                                         38134500 T  0156:3
  B:                                                                       38135000 T  0157:0
         Y:=TALLY;                                                         38135500 T  0157:0
  END;                                                                     38136000 T  0157:1
                                                                                    38131500
IF (USASI:=P)>0 THEN                                                       38136500 T  0157:2
USASITAPE(T1.[CF],USASI,4,U,DIREC) ELSE                                    38137000 T  0158:2
IF M[T1 INX 6].[24:6]=1 THEN                                               38137500 T  0161:1
BEGIN                                                                      38138000 T  0164:1
  REED;                                                                    38138500 T  0164:3
  MASK←@60;                                                                38139000 T  0166:0
  T1←5&3[23:46:2] OR M;                                                    38139500 T  0166:3
  T2←0;                                                                    38140000 T  0169:0
END;                                                                       38140500 T  0169:3
                                                                                    38138000
IF T2 NEQ @40 THEN DO REED UNTIL T2.[42:1] ELSE                            38141000 T  0169:3
  FOR CNTCTL←DIREC STEP 1 UNTIL 2 DO% DIREC = 0 OR 1        %DB            38141500 T  0173:1
```

```
                P(WAITIO(@4740000005&(NOT DIREC)[22:47:1],@377,U),DEL);%DB          38142000 T  0175:0
                                FND;%                                              38142500 T  0180:0
                                                                                                38124500
          CNTCTL←BLEN≤1023;%                                                       38143000 T  0180:0
     END ELSE%                                                                     38143500 T  0181:1
                                                                                                38124500
     IF KIND=9 THEN%                                                              38144000 T  0181:1
     BEGIN UNLABELED←CNTCTL←1;%                                                   38144500 T  0183:3
          DIREC←0;%                                                               38145000 T  0185:2
     END ELSE%                                                                    38145500 T  0186:1
                                                                                                38144500
     IF KIND=11 THEN                                                              38146000 T  0186:1
     BEGIN T1←CIDROW[U-32],[18:15];                                               38146500 T  0187:2
          CIDROW[U-32],[18:15]←0;                                                 38147000 T  0190:0
          M[ALPHA-2]:=[M[T1]]&10[8:38:10]&1[24:47:1];%                            38147500 T  0192:2
          M[T1-4]:=P(DUP,LOD)&P1MIX[AREAMIXF]&LABELAREAV[AREATYPFF];%              38148000 P  0197:0
          MODE:=0;%                                                               38148500 T  0201:1
          CNTCTL:=DIREC:=0;%                                                      38149000 T  0202:0
          FIB[13],[1:9]←NBUFS←1; FIB[13],[10:9]←1;                                38149500 T  0203:1
          IF BLEN<10 THEN BLEN←10;                                                38150000 T  0208:3
     END ELSE                                                                     38150500 T  0210:3
                                                                                                38146500
DCN:: FILEMESS(-"I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);%                          38151000 T  0210:3
     P(1);                                                                        38151500 T  0214:3
          IF BLEN=0 THEN GO TO DCN;%                                              38151800 T  0215:0
          IF NOT FIB[18],[1:1] OR P THEN                                          38151900 T  0216:1
            GETBUFFERS(BLEN,NBUFS,U,ALPHA);                                       38152000 T  0217:3
     GO FIND;                                                                     38152100 T  0219:3
DC19:                                                                             38152250 T  0222:0
 $ SET OMIT = NOT(DATACOM AND RJE )                                               38152500 T  0222:0
          FIB[14]:=NBUFS;                                                         38156500 T  0222:0
          U:=30; KIND:=13;                                                        38157000 T  0223:1
         FIB[13],[1:9]← NBUFS←2;                                                  38157500 T  0224:3
         FIB[18]:=(*P(DUP))&(BLEN:=RLEN)[3:33:15]&BLEN[CTF];                      38158000 T  0227:3
         IF MFID>0 THEN                                                           38158500 T  0231:1
              BEGIN     ;                                                         38159000 T  0232:0
              STREAM(A←0,B←0:MFID,FID,C←0);                                       38159500 T  0232:2
                   BEGIN                                                          38160000 T  0234:2
                   SI← LOC MFID;  DI← LOC A;                                      38160500 T  0234:2
                   2(C← SI; 8(IF SC≥0 THEN IF SC≤9 THEN TALLY← TALLY+1            38161000 T  0235:0
                                ELSE JUMP OUT ELSE JUMP OUT; SI← SI+1));          38161500 T  0236:3
                     SI← C; C← TALLY; DS← C OCT; TALLY← 0; SI← LOC FID);          38162000 T  0239:0
                   END;                                                           38162500 T  0240:3
                                                                                                38160000
              FID← P;                                                             38163000 T  0241:0
              MFID←P;                                                             38163500 T  0241:2
              END;                                                                38164000 T  0242:0
                                                                                                38159000
         M[ALPHA-2]← 0&MFID[9:44:4]&FID[14:44:4];                                 38164500 T  0242:0
FIND::                                                                            38191500 T  0246:0
     P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                                      38192000 T  0246:0
END OTHER FILE OPEN IN;                                                           38192500 T  0248:2
                                                                                                38102100
                                                                                  SIZE= 0249 WORDS
```

```
                PROCEDURE OTHERFILEOPENOUT(ALPHA); VALUE ALPHA; INTEGER ALPHA;                    38200000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00916
PRT(677) = OTHERFILEOPENOUT
                BEGIN REAL RCW=+0,MSCW=-2;                                                       38200100 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                      REAL IOM=IOMASK, IOMASK=+1;                                                38200200 T  0000:0
PRT(362) = IOM
STACK(F+1) = IOMASK
                      INTEGER NBUFS=+2,FNUM=+3,RLEN=+4,TYPE=+5,IO=+6,BLEN=+7,U=+8,               38200300 T  0000:0
STACK(F+2) = NBUFS
STACK(F+3) = FNUM
STACK(F+4) = RLEN
STACK(F+5) = TYPE
STACK(F+6) = IO
STACK(F+7) = BLEN
STACK(F+10) = U
                           KIND=+9,MODE=+10,DIREC=+11,FORMS=+12,COBOL=+13,                       38200400 T  0000:0
STACK(F+11) = KIND
STACK(F+12) = MODE
STACK(F+13) = DIREC
STACK(F+14) = FORMS
STACK(F+15) = COBOL
                           UNLABELED=+14,OPTIONAL=+15,CNTCTL=+16;                                38200500 T  0000:0
STACK(F+16) = UNLABELED
STACK(F+17) = OPTIONAL
STACK(F+20) = CNTCTL
                      REAL T1=+17,T2=+18,MASK=+19,STATE=+20;                                     38200600 T  0000:0
STACK(F+21) = T1
STACK(F+22) = T2
STACK(F+23) = MASK
STACK(F+24) = STATE
                    REAL MFID=+21,FID=+22; INTEGER REEL=+23,CDATE=+24,CYCLE=+25;                 38200700 T  0000:0
STACK(F+25) = MFID
STACK(F+26) = FID
STACK(F+27) = REEL
STACK(F+30) = CDATE
STACK(F+31) = CYCLE
                      ARRAY FIB=+26[*],FPB=+27[*];%                                              38200800 T  0000:0
STACK(F+32) = FIB
STACK(F+33) = FPB
                      INTEGER ACCESS=+28,FIB7=+29;                                               38200900 T  0000:0
STACK(F+34) = ACCESS
STACK(F+35) = FIB7
                      ARRAY HEADER=+30[*];%                                                      38201000 T  0000:0
STACK(F+36) = HEADER
                       REAL TOG=+31;                                                             38201100 T  0000:0
STACK(F+37) = TOG
                      REAL USASI=NT1, RHEAD=HEADER;                                              38201200 T  0000:0
PRT(160) = USASI
STACK(F+36) = RHEAD
                      LABEL LPS,FIND,DCN,PBS;                                                    38201300 T  0000:0
                      SUBROUTINE TYPEOPEN;%                                                      38201400 T  0000:0
                          BEGIN                                                                  38201500 T  0001:0
                             T1:=(OPNMESS AND ((T1:=JAR[P1MIX,0])>0 OR                           38201600 T  0001:0
                                COPNMESS AND T1<0));                                           38201700 T  0003:3
                   $ SET OMIT = PACKETS                                                          38201800 T  0006:2
```

```
                BEGIN NT2:=0;                                                    38202100 T  0006:2
                      IF U<16 THEN                                               38202200 T  0007:1
                      STREAM(S:=PRNTABLE[U],[30:18], D:=[NT2]);                  38202300 T  0008:0
                        BEGIN SI ← LOC S; DS ← 8 DEC;          %                 38202400 T  0010:1
                              DI ← DI-7; DS ← 6 FILL;          %                 38202500 T  0010:3
                        END;                                   %                 38202600 T  0011:1
                                                                                                38202400
                      FILEMESSAGE((" OUT")&                                      38202700 T  0011:2
                        TINU[U][6:30:18], NT2, FPB[FNUM], FPB[FNUM+1],           38202800 T  0012:0
                        IF KIND=2 OR KIND=9 THEN P(REEL,CDATE) ELSE              38202900 T  0015:0
                        P(0,0), P, CYCLE, T1);                                   38203000 T  0018:1
                END;                                                             38203100 T  0019:2
                                                                                                38202100
    END;                                                                         38203200 T  0019:2
                                                                                                38201500
SUBROUTINE REED;%                                                                38203300 T  0021:0
 BEGIN IF (T2←WAITIO(T1,(MASK OR @40)&@377[CTF],U) AND @367)≠0 THEN              38203400 T  0021:0
       IF (T2 AND NOT MASK)≠0 THEN                                               38203500 T  0024:2
       BEGIN STOPTIMING(FNUM,1023); BLASTQ(U); SETNOTINUSE(U,0);                 38203600 T  0026:3
             FILEMESS(-"PARITY ","ON ... "&TINU[U][24:30:18],%                   38203700 T  0030:0
                   MFID,FID,REEL,CDATE,CYCLE);%                                38203800 T  0030:0
       END;%                                                                     38203900 T  0034:0
                                                                                                38203600
       IF TERMSET(P1MIX) THEN                                                    38204000 T  0034:0
       BEGIN STOPTIMING(FNUM,1023); SETNOTINUSE(U,0);                            38204100 T  0035:2
             GO TO INITIATE;                                                     38204200 T  0038:0
       END;                                                                      38204300 T  0038:2
                                                                                                38204100
 END REED;%                                                                      38204400 T  0038:2
                                                                                                38203400
REAL SUBROUTINE CNTLBITS;%                                                       38204500 T  0041:0
       CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1]              38204600 T  0041:0
             &IO[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]                38204700 T  0043:2
             &(IF KIND=10R KIND=70R KIND=12THEN@20ELSE 0)[27:42:6];              38204800 T  0048:0
SUBROUTINE LABELAREA;%                                                           38204900 T  0053:0
       M[T1:=ALPHA-2]:=M OR (GETSPACE((T1:=M[T1],SIZE)+4,      %167-             38205000 P  0055:0
                   LABELAREAV,1)+4) & T1[SIZE] & CNTLBITS[FTF];                  38205100 P  0059:3
 P(RCW,MSCW,STF);                                                                38210000 T  0063:0
 RCW:=RCW&P(XCH)[CTC];                                                           38210500 T  0066:0
       IF STATE.[41:1] THEN%                                                     38211500 T  0067:1
       BEGIN U←FIB[15].[25:5];%                                                  38212000 T  0068:0
       END ELSE%                                                                 38212500 T  0070:0
                                                                                                38212000
       BEGIN T2:=FPB[FNUM+3];      % SAVES COPIES FOR BACK UP                     38213000 T  0070:0
         IF (U:=FINDOUTPUT(MFID,FID,REEL,CDATE,CYCLE,TYPE                        38213500 T  0072:0
$ SET OMIT = NOT PACKETS                                                         38214000 T  0073:2
             &FPB[FNUM+3][1:23:1]                                                38214500 T  0073:2
$ POP OMIT                                                                       38215000 T  0074:3
             ,FORMS,KIND))>40 THEN                                               38215500 T  0074:3
         BEGIN FIB[14].[3:15]←U;                                                 38216000 T  0077:1
             FPB[FNUM+2].[18:30]←DATE;                                           38216500 T  0080:1
             IF MCP≠NOT(-0) THEN M[U+2]←USERCODE[P1MIX];                         38217000 T  0083:1
             M[U+3]←XCLOCK+P(RTR);                                               38217500 T  0088:0
         T1:=SPACE(30);                                                          38218000 T  0090:2
         MOVE(30,U,T1);                                                          38218500 T  0092:3
         STREAM(DATE,B:=T1+3);                                                   38219000 T  0094:1
         BEGIN SI:=LOC DATE;DS:=80CT;DI:=DI-8;DS:=2LIT"+2";END;                  38219500 T  0095:3
                                                                                                38219500
```

```
                M[T1+1]←(XCLOCK+P(RTR))&(M[T1+3])[6:30:18];                    38220000 T  0097:1
                M[T1+4]:= 0&SYSNO[4:46:2]&1[2:47:1];                           38220500 T  0102:0
                M[T1+5]←(*P(DUP))&1[2:47:1]; %ABORTED PBD TOG.                 38221000 T  0106:0
$ SET OMIT = RJE AND DATACOM                                                   38221500 T  0109:1
                P(0);                                                          38222000 T  0109:1
$ POP OMIT                                                                     38222500 T  0109:2
$ SET OMIT = NOT(RJE AND DATACOM)                                              38223000 T  0109:2
                M[T1+6]←P(XCH);                                                38226500 T  0109:2
                M[U-1]:=EUF(IF TYPE NEQ 0 AND TYPE LSS 20 THEN                 38227000 T  0111:2
                    "PBD    " ELSE "PUD    ",M[U+6],T1-1);                    38227500 T  0114:3
                FORGETSPACE(T1);                                               38228000 T  0119:1
$ SET OMIT = PACKETS                                                           38228500 T  0120:0
                   FILEMESSAGE((IF TYPE GEQ 20 OR TYPE=0 THEN "PUD...."        38230000 T  0120:0
                                ELSE "PBD....")&M[U+6][24:6:24],               38230500 T  0122:3
                                "OUT    "&M[U+6][30:30:18],                    38231000 T  0125:3
                                MFID,FID,0,0,0,                                38231500 T  0128:1
                                (PBDREL OR OPNMESS));                          38232000 T  0129:2
                     STARTIMING(FNUM,U+18);                                    38232500 T  0131:2
                     FPB:=PRT[P1MIX,3]; % STARTIMING MAY HAVE MOVED IT.        38233000 T  0133:0
               END ELSE                                                        38233500 T  0134:2
                                                                                           38216000
               IF U LSS 0 THEN %DSED                                           38234000 T  0134:2
               BEGIN FIB[5].[39:4]:=9; GO FIND END ELSE                        38234500 T  0140:3
                                                                                           38234500
               BEGIN                                                           38235000 T  0144:1
                   STARTIMING(FNUM,U);%                                        38235500 T  0144:3
                   FPB:=PRT[P1MIX,3];   % WATCH OUT FOR STARTIMING.           38236000 T  0145:3
                   IF KIND=7 THEN FPB[FNUM+3] := (*P(DUP))&T2[15:15:8];        38236010 T  0147:1
                   TYPEOPEN;%                                                  38236500 T  0151:2
                   IF TYPE=5 OR TYPE=8 OR TYPE=9 THEN UNLABELED←1;%            38237000 T  0153:0
                   IF U<16 THEN BEGIN RRRMECH←TWO(U) OR RRRMECH;               38237500 T  0157:0
                                      PRNTABLE[U],[15:15]←ALPHA;%              38238000 T  0160:0
                 END;                     END;                                 38238500 T  0162:2
                                                                                           38237500
                                                                                           38235000
                 END;%                                                         38239000 T  0162:2
                                                                                           38213000
           IF KIND=6 THEN%                                                     38239500 T  0162:2
           BEGIN BLEN:=10;                                                     38240000 T  0163:1
                 FIB[18]:=(*P(DUP))&BLEN[CTC]&BLEN[CTF]&BLEN[3:33:15];         38240500 T  0164:2
                 MODE←DIREC←CNTCTL←0;%                                         38241000 T  0168:0
           END ELSE%                                                           38241500 T  0169:3
                                                                                           38240000
           IF KIND=1 THEN%                                                     38242000 T  0169:3
           BEGIN MODE←DIREC←CNTCTL←0;%                                         38242500 T  0171:0
LPS:                                                                           38243000 T  0173:1
                 IF NOT COBOL THEN M[ALPHA-2]←0&15[8:38:10];%                  38243500 T  0173:1
           END ELSE%                                                           38244000 T  0177:1
                                                                                           38242500
           IF KIND=12 THEN                                                     38244500 T  0177:1
           BEGIN TYPE←IF (TYPE≠0 AND TYPE<20) THEN 15 ELSE 22;                 38245000 T  0178:2
PBS:       MODE←DIREC←0; FIB[13].[1:9]←NBUFS←CNTCTL←1; FIB[13].[10:9]←1;       38245500 T  0182:3
                 BLEN←IF TYPE≥20 THEN 10 ELSE IF BLEN>17 THEN 17 ELSE BLEN;    38246000 T  0190:0
                 M[T1←GETSPACE(92,3,1)+2]←M[T1-1]←[M[ALPHA]]&(T1+2)[CTF]&       38246500 T  0194:3
                   U[12:42:6];                                                 38247000 T  0200:2
                 DISKIO(RHEAD,-T1-75,11,JAR[P1MIX,6].[CF]);                    38247500 T  0202:2
                 M[ALPHA]:=T1+2;                                               38248000 T  0206:0
```

```
      FIB[14]←(*P(DUP))&(T1+2)[CTC]&(T1+56)[CTF];                                38248500 T  0208:0
     FIB[18]←(*P(DUP))&BLEN[CTC]&BLEN[CTF]&BLEN[03:33:15];                       38249000 T  0211:2
      STREAM(D←T1+1); 2(36(DS←8 LIT"0"));                                        38249500 T  0215:0
      FIB[5].[FF]←(M[T1+91]←FIB[5].[FF]&1[18:47:1])+1;                           38250000 T  0218:3
      SLEEP([RHEAD],IOMASK);                                                     38250500 T  0224:3
      HEADER:=[M[T1]]&92[8:38:10];                                               38251000 T  0226:1
    HEADER[74]←MFID;                                                             38251500 T  0228:2
    HEADER[75]←FID;                                                              38252000 T  0229:3
    HEADER[87]←FORMS;                                                            38252500 T  0231:0
    HEADER[88]:=T2.[15:8];        % COPIES                                       38253000 T  0232:1
    HEADER[89]:=USERCODE[P1MIX];                                      %132-      38253100 C  0234:0
    HEADER[76]←ABS(JAR[P1MIX,0]);                                                38253500 T  0235:2
    HEADER[77]←ABS(JAR[P1MIX,1]);                                                38254000 T  0237:3
      REEL←RDCTABLE[U].[14:10];  % GET ACTUAL REEL NUMBER             %745-      38254100 C  0240:0
      GO TO LPS;                                                                 38254500 T  0241:2
END ELSE                                                                         38255000 T  0242:0
                                                                                              38245000
IF KIND=7 THEN%                                                                  38255500 T  0242:0
BEGIN TYPE←IF (TYPE≠0 AND TYPE<20) THEN 6 ELSE 20;                               38256000 T  0243:1
IF SVPBT THEN SAVEWORD:=TWO(U) OR SAVEWORD;                                      38256500 T  0247:2
      GO TO PBS;                                                                 38257000 T  0250:2
END ELSE%                                                                        38257500 T  0251:0
                                                                                              38256000
IF KIND=2 THEN%                                                                  38258000 T  0251:0
BEGIN IF PRNTABLE[U]≥0 THEN GO TO DCN;%                                          38258500 T  0252:1
      CNTCTL←MODE;%                                                              38259000 T  0254:1
END ELSE%                                                                        38259500 T  0255:0
                                                                                              38258500
IF KIND=8 THEN%                                                                  38260000 T  0255:0
BEGIN UNLABELED←CNTCTL←1;%                                                       38260500 T  0256:1
      DIREC←0;%                                                                  38261000 T  0258:0
END;%                                                                            38261500 T  0258:3
                                                                                              38260500
IF UNLABELED THEN%                                                               38262000 T  0258:3
BEGIN IF COBOL THEN%                                                             38262500 T  0259:0
      BEGIN MASK←0;%                                                             38263000 T  0259:3
            IF KIND=1 THEN BEGIN T1←@4000100000; REED END ELSE                   38263500 T  0261:0
                                                                                              38263500
            IF KIND=7 OR KIND=12 THEN                                            38264000 T  0264:0
            BEGIN                                                                38264500 T  0267:3
            IF TYPE < 20 THEN                                                    38265000 T  0268:1
            BEGIN                                                                38265500 T  0269:0
                  HEADER[73]←@1540176000;00000&FIB[5][FTC];                      38266000 T  0269:2
                  FIB[5].[FF]←FIB[5].[FF]+1;                                     38266500 T  0271:2
                  FIB[14].[FF]:=T1+38;                                           38267000 T  0274:3
            END;                                                                 38267500 T  0277:1
                                                                                              38265500
            GO FIND;                                                             38268000 T  0277:1
            END;                                                                 38268500 T  0279:0
                                                                                              38264500
      END;%                                                                      38269000 T  0279:0
                                                                                              38263000
END ELSE%                                                                        38269500 T  0279:0
                                                                                              38262500
BEGIN IF COBOL THEN%                                                             38270000 T  0279:0
      BEGIN M[ALPHA"2]←P(DUP,LOD)&CNTLBITS[18:18:15];%                           38270500 T  0279:3
            IF U<16 THEN%                                                        38271000 T  0283:3
```

```
      STREAM(N←PRNTABLE[U],[30:18],D←M[ALPHA-2]);%                    38271500 T  0284:2
            BEGIN SI←LOC N; DI←DI+53; DS←5 DEC END;%                  38272000 T  0288:0
                                                                                  38272000
END ELSE%                                                             38272500 T  0289:0
                                                                                  38270500
BEGIN IF REEL=0 THEN REEL←1;%                                         38273000 T  0289:0
      IF CYCLE=0 THEN CYCLE←1;%                                       38273500 T  0291:2
      IF CDATE=0 THEN STREAM(DATE,CD←[CDATE]);%                       38274000 T  0293:2
                  BEGIN SI←LOC DATE; SI←SI+3; DS←5 OCT END;           38274500 T  0295:3
                                                                                  38274500
      LABELAREA;%                                                     38275000 T  0296:3
      BUILDLABEL(M[ALPHA-2],MFID,FID,REEL,CDATE,CYCLE,%               38275500 T  0298:0
                FIB[4],(IF U<16 THEN PRNTABLE[U],[30:18]              38276000 T  0301:0
                                ELSE 0),STATE,[46:2],%                38276500 T  0303:0
                BLEN,RLEN);%                                          38277000 T  0305:1
END;%                                                                 38277500 T  0306:0
                                                                                  38273000
M[M[ALPHA-2] INX P(DUP),[8:10]]←@3700000000000000;%                   38278000 T  0306:0
IF (P(KIND,DUP)=7 OR (P(XCH,DUP)=12 OR P(XCH)=1)) THEN                38278500 T  0309:3
IF KIND=7 AND FIB[13],[28:10]≠ABS(COBOL) THEN GO FIND ELSE            38279000 P  0313:0
BEGIN IF TYPE GEQ 20 THEN % MAKE CP BACK-UP LABEL                     38279500 T  0316:1
BEGIN M[M[ALPHA-2] INX 4]:=FLAG(NABS(JAR[P1MIX,0]));                  38280000 T  0317:3
      M[M[ALPHA-2] INX 5]:=FLAG(JAR[P1MIX,1]&17[1:43:5]);             38280500 T  0322:3
      STREAM(A:=[M[M[ALPHA-2] INX 6]]);                               38281000 T  0328:0
      BEGIN DS:=15 LIT" PUNCH BACK-UP "; DS:=LIT"%";                  38281500 T  0331:0
            2(DS:=8 LIT"%%%%%%%%");                                   38282000 T  0333:3
      END;                                                            38282500 T  0335:2
                                                                                  38281500
END ELSE % MAKE LP LABEL                                              38283000 T  0335:3
                                                                                  38280000
BEGIN T1:=M[M[ALPHA-2]INX 3];                                         38283500 T  0335:3
      DISKIO(T2,NABS(M[ALPHA-2]INX 1),11,JAR[P1MIX,6],[CF]);          38284000 T  0341:1
      M[M[ALPHA-2]INX 13]:=FLAG(NABS(JAR[P1MIX,0]));                  38284500 T  0345:3
      M[M[ALPHA-2]INX 14]:=FLAG(JAR[P1MIX,1]&17[1:43:5]);             38285000 T  0350:2
      SLEEP([T2],IOMASK);                                             38285500 T  0355:3
      M[M[ALPHA-2] INX 3]:=T1;                                        38286000 T  0357:1
END;                                                                  38286500 T  0360:2
                                                                                  38283500
      M[M[ALPHA-2] INX 1]:=MFID;                                      38287000 T  0360:2
      M[M[ALPHA-2] INX 2]:=FID;                                       38287500 T  0363:3
      IF KIND=1 THEN M[ALPHA-2]←P(DUP,LOD) &            %150-       38288000 P  0367:0
         (IF SEPARATE THEN 1 ELSE @20)[27:42:6]         %150-       38288100 C  0370:0
      ELSE                                              %150-       38288200 C  0372:1
      BEGIN HEADER[73]←(FIB[5],[FF] OR @3601701000000000)&            38288500 T  0373:2
            (TYPE<20)[32:47:1];                                       38289000 T  0376:0
            IF NOT SEPARATE THEN                        %150-       38289100 C  0378:0
               IF (TYPE<20) THEN                        %150-       38289200 C  0379:0
                  HEADER[73]←P(DUP,LOD)&(@20)[27:42:6];%150-        38289300 C  0380:1
            FIB[5]←P(DUP,LOD,0,1,CFX,+);                              38289500 T  0383:1
            STREAM(L←M[ALPHA-2],B←[HEADER[56]]);                      38290000 T  0385:3
            BEGIN SI←L; DS←17 WDS END;                                38290500 T  0388:1
                                                                                  38290500
            FIB[14],[FF]←[HEADER[38]]; GO FIND;                       38291000 T  0389:0
END;  END;                                                            38291500 T  0393:0
                                                                                  38288500
                                                                                  38279500
T1←NFLAG(M[ALPHA-2]);%                                                38292000 T  0393:0
```

```
                MASK←0; REED;%
                IF KIND=2 THEN%
                BEGIN T2←@1737000000000000;%
                      T1←NFLAG([T2]);%
                      REED;%
                END;%

          END;%

          P(0);
               IF BLEN=0 THEN
DCN::          FILEMESS("I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);
               IF NOT FIB[18].[1:1] OR P THEN
                    GETBUFFERS(BLEN,NBUFS,U,ALPHA);
FIND::
          P(P&RCWICTC],0,RDS,0,XCH,P&P[CTF],STF);
END OTHER FILE OPEN OUT;
```

```
38292500 T  0395:1
38293000 T  0397:0
38293500 T  0397:3
38294000 T  0399:0
38294500 T  0400:0
38295000 T  0401:0
                    38293500
38295500 T  0401:0
                    38270000
38296000 T  0401:0
38296500 T  0401:1
38296750 T  0402:0
38297000 T  0405:3
38297500 T  0407:1
38298000 T  0409:1
38298500 T  0409:1
38299000 T  0412:2
                    38200100
              SIZE= 0415 WORDS
```

```
                PROCEDURE DISKCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%                                  38355000 T  0000:0
                                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00930
PRT(700) = DISKCLOSE
                BEGIN REAL RCW=+0,MSCW=-2;                                                               38356000 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                      ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%                                           38357000 T  0000:0
STACK(F+1) = FIB
STACK(F+2) = FPB
STACK(F+3) = HEADER
                   %%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP                 38358000 T  0000:0
                      INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,                                     38359000 T  0000:0
STACK(F+4) = KIND
STACK(F+5) = NBUFS
STACK(F+6) = U
STACK(F+7) = BLEN
STACK(F+10) = CODE
                          UNLABELED=+9,COBOL=+10,I=+11,J=+12,                                            38360000 T  0000:0
STACK(F+11) = UNLABELED
STACK(F+12) = COBOL
STACK(F+13) = I
STACK(F+14) = J
                          FNUM=+13;                                                                      38361000 T  0000:0
STACK(F+15) = FNUM
                      REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;                        38362000 T  0000:0
STACK(F+16) = MID
STACK(F+17) = FID
STACK(F+20) = R
STACK(F+21) = D
STACK(F+22) = C
STACK(F+23) = FORMS
STACK(F+24) = STATE
                      LABEL L1,L2,L3,EOF,CLEANUP;                                                        38363000 T  0000:0
                      LABEL OBJTYPE,DUMMY;                                                               38364000 T  0000:0
                      REAL STA=+21;%                                                                     38364100 T  0000:0
STACK(F+25) = STA
                      REAL T1=+22,T2=+23,T3=+24,IOD=+25;%                                                38365000 T  0000:0
STACK(F+26) = T1
STACK(F+27) = T2
STACK(F+30) = T3
STACK(F+31) = IOD
                      ARRAY SEGO=+26[*],SKEL=+27[*];%                                                    38366000 T  0000:0
STACK(F+32) = SEGO
STACK(F+33) = SKEL
                      REAL T=+28,ACCESS=+29;%                                                            38366010 T  0000:0
STACK(F+34) = T
STACK(F+35) = ACCESS
                      BOOLEAN COMPGO=+30;                                                                38366020 T  0000:0
STACK(F+36) = COMPGO
                   $ SET OMIT = NOT SHAREDISK                                                            38366099 T  0000:0
                      SUBROUTINE COOLOFF;                                                                38370700 T  0000:0
                      BEGIN FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                                             38370800 T  0001:0
                            BEGIN IF NOT M[ALPHA+I].[19:1] THEN%                                         38371000 T  0005:1
                                        SLEEP([M[ALPHA+I]],IOMASK);%                                     38372000 T  0007:2
                                  IF KIND≠4 THEN                                                         38373000 T  0010:2
                                  IF M[ALPHA+I].[27:1] THEN GO TO EOF;%                                  38374000 T  0011:1
                            END;%                                                                        38375000 T  0014:2
```

```
                                                                                                      38371000
EOF:  END COOLOFF;%                                                                       38376000 T  0015:0
                                                                                                      38370800
%                                                                                         38376500 T  0015:1
      BOOLEAN SUBROUTINE WRITTENON;      % PICKS UP THE ACCESSED BITS FROM                38377000 T  0015:1
      BEGIN J:=0;                        % THE BUFFERS.                                   38377200 T  0016:0
            IF (T:=FIB[10].[3:15]) NEQ 0 THEN                                             38377400 T  0016:3
            BEGIN                                                                         38377600 T  0018:3
                  FOR I:=NBUFS-1 STEP -1 UNTIL 0 DO                                       38377800 T  0019:1
                  IF M[T].[11:1] THEN J:=I:=-1 ELSE T:=M[T].[FF]-2;                       38378000 T  0023:2
            END;                                                                          38378200 T  0030:2
                                                                                                      38377600
            WRITTENON:=J;                                                                 38378400 T  0030:2
      END;                                                                                38378600 T  0031:0
                                                                                                      38377200
%                                                                                         38379000 T  0031:1
      DEFINE REW=CODE.[47:1]#,%                                                           38380000 T  0031:1
             KRUNCH=NOT CODE.[42:1]#,                                                     38381000 T  0031:1
             REL=CODE.[46:1]#,%                                                           38382000 T  0031:1
             TIME=CODE.[45:1]#,%                                                          38383000 T  0031:1
             LOCK=NOT CODE.[44:1]#,%                                                      38384000 T  0031:1
             PURGE=NOT CODE.[43:1]#;%                                                     38385000 T  0031:1
      DEFINE TECH=STATE.[46:2]#,                OPENIO=FIB[13].[22:1]#,                   38385400 T  0031:1
             WRITBACK=FIB[13].[23:1]#,          LASTIO=FIB[13].[46:1]#,                   38385500 T  0031:1
             WRITEAFTEREOF=FIB[13].[44:2]#,     INPUT=STATE.[43:1]#;                      38385600 T  0031:1
%                                                                                         38386000 T  0031:1
%     START OF CODE                                                                       38386010 T  0031:1
%                                                                                         38386020 T  0031:1
      P(RCW,MSCW,STF);         RCW ← RCW & P(XCH)[CTC];                                   38387000 T  0031:1
      HEADER ← FIB[14];        ACCESS ← FIB[4].[27:3];                                    38388000 T  0034:1
      IF COBOL THEN                                                                       38389000 T  0036:3
      BEGIN  IF COBOL > 0 THEN                          % COBOL 61                        38389100 T  0037:0
             BEGIN IF WRITBACK AND TECH=0 AND LASTIO AND                                  38389200 T  0038:1
                      (OPENIO OR NOT(INPUT))   THEN                                       38389300 T  0042:2
                       IF ACCESS=1 AND WRITEAFTEREOF≠0 THEN                               38389400 T  0045:0
                       BEGIN  FIB[7] ← *P(DUP) - 1;                                       38389500 T  0048:0
                                HEADER[7] ← *P(DUP) - 1;                                  38389600 T  0050:2
                       END ELSE WRITEAFTEREOF ← 0;                                        38389700 T  0052:2
                                                                                                      38389500
                  IF TECH=0 THEN IF WRITEAFTEREOF=2 THEN                                  38389800 T  0055:2
                     BEGIN  FIB[7] ← *P(DUP) + 1;                                         38389900 T  0058:3
                              HEADER[7] ← *P(DUP) + 1;                                    38390000 T  0061:1
                     END ELSE IF WRITEAFTEREOF=1 THEN                                     38390100 T  0063:1
                                                                                                      38389900
                     BEGIN  FIB[7] ← *P(DUP) - 1;                                         38390200 T  0065:1
                              HEADER[7] ← *P(DUP) - 1;                                    38390300 T  0067:3
                     END;                                                                 38390400 T  0069:3
                                                                                                      38390200
                  WRITEAFTEREOF ← 0;                                                      38390500 T  0069:3
             END;                                                                         38391000 T  0072:1
                                                                                                      38389200
             IF ACCESS=1 THEN                           % IF RANDOM                       38391010 T  0072:1
            BEGIN IF COBOL > 0 THEN                     % COBOL61                         38391020 T  0073:0
                  BEGIN ACCESS ← 4;                                                       38391025 T  0074:1
                        IF FIB[13].[10:9] = 2 THEN   % SEEK IN PROCESS                    38391030 T  0075:2
                        BEGIN                                                             38391035 T  0077:0
 $ SET OMIT = NOT SHAREDISK                                                               38391039 T  0077:2
```

```
                    COOLOFF; FIB[13].[10:9] ← 1;                                    38391050 T  0077:2
                    END                                                             38391055 T  0081:2
                                                                                                38391035
                FND ELSE IF FIB[17]<BLEN THEN ACCESS←4;  % COBOL68                  38391060 T  0081:2
                                                                                                38391025
          END;                                                                      38391070 T  0084:1
                                                                                                38391020
          IF FIB[13].[23:1] AND ACCESS=0 THEN                                       38391080 T  0084:1
            BEGIN FIB[7]←P(DUP,LOD)-1;                                              38391090 T  0086:1
              ACCESS←4;                                                             38391100 T  0088:3
    END;  END;                                                                      38391110 T  0089:2
                                                                                                38391090
                                                                                                38389100
    IF NOT STATE.[41:1] THEN%                                                       38392000 T  0089:2
    BEGIN IF ACCESS=1 THEN%                                                         38393000 T  0090:2
          BEGIN                                                                     38394000 T  0091:3
$ SET OMIT = NOT SHAREDISK                                                          38394099 T  0092:1
               COOLOFF;                                                             38394300 T  0092:1
          END ELSE%                                                                 38395000 T  0093:0
                                                                                                38394000
          IF ACCESS=0 THEN%                                                         38396000 T  0093:0
          BEGIN COOLOFF; IF NOT STATE.[43:1] THEN%                                  38397000 T  0094:1
                IF FIB[17]<BLEN AND STATE.[46:2]≠0 THEN%                            38398000 T  0097:0
                BEGIN R:=SPACE(((BLEN+29) DIV 30)×30+1);                            38399000 T  0100:0
                      IF (M[R]←M[FIB[16]]←%                                         38400000 T  0104:3
DISKADDRESS(MID,FID,FPB[FNUM+3],FIB[7]-1,HEADER,0)) NEQ 0 THEN  % (SHM)             38401000 T  0106:2
                BEGIN                                                               38401100 T  0111:3
                      P(WAITIO(FIB[16]&1[24:47:1]&R[33:33:15],%                     38402000 T  0112:1
                            0,U),DEL);%                                             38403000 T  0114:2
                      MOVE(FIB[17],R+BLEN-FIB[17]+1,%                               38404000 T  0115:2
                           FIB[16] INX BLEN-FIB[17]+1);%                            38405000 T  0118:2
                      P(WAITIO(FIB[16],0,U),DEL);%                                  38406000 T  0121:0
                      IF NOT FIB[16].[24:1] THEN HEADER[4].[11:1]←1;                38406500 T  0122:3
                                                                    END;            38407000 T  0127:0
                                                                                                38401100
                      FORGETSPACE(R);%                                              38408000 T  0127:0
                END;%                                                               38409000 T  0127:3
                                                                                                38399000
          END ELSE%                                                                 38410000 T  0127:3
                                                                                                38397000
          BEGIN                                                                     38411000 T  0127:3
$ SET OMIT = NOT SHAREDISK                                                          38411009 T  0128:1
               COOLOFF;                                                             38411030 T  0128:1
            IF (FIB[17]LSS BLEN AND STATE.[46:2]NEQ 0)OR ACCESS=4 THEN              38411100 T  0129:0
          BEGIN       IF ACCESS=4 THEN                                            38411200 T  0132:0
                        IF FIB[13].[23:1] OR NOT STATE.[43:1] THEN                  38411300 T  0133:3
                          ACCESS:=2;                                                38411400 T  0136:2
             IF (M[FIB[16]]:=DISKADDRESS(MID,FID,FPB[FNUM+3],  % (SHM)              38411500 T  0137:3
                          FIB[7],HEADER,0))=0 THEN ACCESS:=4;                       38411600 T  0140:2
                      IF ACCESS≠4 THEN                                              38411700 T  0144:1
                        BEGIN P(WAITIO(FIB[16]&0[24:24:1],0,U),DEL);                38411750 T  0145:0
                            HEADER[4].[11:1]←1; END;                                38411800 T  0148:1
                                                                                                38411750
    END;    IF ACCESS = 4 THEN ACCESS := 2;                                         38411900 T  0150:3
                                                                                                38411200
    END;%                                                                           38412000 T  0152:3
                                                                                                38411000
```

```
      END;%                                                                                38412100 T  0152:3
                                                                                                    38393000
    HEADER[4].[43:1]:=FPB[FNUM+3].[15:1];                                                  38412200 T  0152:3
    IF (NOT REW) OR LOCK OR REL OR TIME THEN                                               38419000 T  0156:2
    BEGIN                                                                                  38420000 T  0160:3
      FORMS←HEADER[3];                                                                     38421000 T  0161:1
      STREAM(PF←[F1B[4]],D←FPB[FNUM+2].[18:30],H←[HEADER[3]],S←[T]);                       38422000 T  0162:1
      BEGIN SI←PF;SI←SI+5;DS←3 OCT;SI←LOC D;DI←H;DS←8 OCT END;                             38423000 T  0165:2
                                                                                                    38423000
      HEADER[3]←(P(DUP,LOD,SSN))&(P(DUP))[12:30:18]&T[2:38:10];                            38424000 T  0167:1
    END;                                                                                   38425000 T  0171:0
                                                                                                    38420000
      IF LOCK OR HEADER[4].[43:1] THEN                                                     38426000 T  0171:0
      BEGIN IF NOT HEADER[4] THEN%FILE IS BEING CREATED                                    38427000 T  0173:1
            BEGIN                                                                          38428000 T  0174:2
              IF KRUNCH THEN KRUNCHER(HEADER);                                             38429000 T  0175:0
                   HEADER[4].[9:3]:=5;% MARK AS NEW FORMAT,ACCESSED                        38430000 T  0177:2
                  IF JAR[P1MIX,0] < 0 AND FIB[4].[29:1] THEN                               38431000 T  0180:0
% COMPILER CLOSING CODE FILE WITH LOCK ***********************************               38432000 T  0182:3
                  BEGIN                                                                    38433000 T  0182:3
                       SEG0:=[M[TYPEDSPACE(62,SEGZEROAREAV)]]&30[SIZE];                    38434000 P  0183:1
                       SKEL ← 31 INX SEG0; T3 ← JAR[P1MIX,2].[FF];                         38435000 T  0185:3
                       % READ IN SEGMENT ZERO                                             38436000 T  0190:2
                       DISKWAIT(-SEG0.[CF],30,HEADER[10]);                                 38437000 T  0190:2
                       % READ IN SKELETON SHEET                                           38438000 T  0193:0
                       DISKWAIT(-SKEL.[CF],30,T3);                                         38439000 T  0193:0
                       IF SKEL[20]<0 THEN SKEL[20] ← SEG0[7].[FF];                         38440000 T  0195:1
                       IF JAR[P1MIX,2].[8:10]=1 THEN                                       38441000 T  0198:3
                          BEGIN % COMPILE AND GO ***********************                   38442000 T  0200:3
                            SKEL[6]:=JAR[P1MIX,6]&                                         38442100 T  0201:1
                                     (PRT[P1MIX,3],[8:10]+20)[CTF];                        38442200 T  0202:3
                            DISKWAIT(SKEL,[CF],30,T3);                                     38443000 T  0205:2
                            COMPGO ← TRUE;                                                 38444000 T  0207:2
                          END                                                              38445000 T  0208:1
                                                                                                    38442000
                     ELSE                                                                  38446000 T  0208:1
                          BEGIN % COMPILE TO LIBRARY ******************                    38447000 T  0208:1
                            FOR T1 ← 15 STEP 1 UNTIL 22 DO                                 38448000 T  0208:3
                                 SEG0[T1] ← SKEL[T1];                                      38449000 T  0210:0
                            IF (T2 ← SKEL[13]) = 0 THEN GO TO L3;                          38450000 T  0213:3
                            SKEL[13] ← 0; % IN CASE I CALL TERMINATE                       38451000 T  0215:3
                            DISKWAIT(SKEL,[CF],30,T3);                                     38452000 T  0217:0
IF(T1:=DISKADDRESS(MID,FID,FPB[FNUM+3],HEADER[7]:=  % (SHM)                                38453000 T  0219:0
                             (*P(DUP))+1,HEADER,0))=0 THEN                                 38454000 T  0221:1
                                FILEMESS(="DISK   ","OVRFLOW",MID,FID,                     38455000 T  0224:3
                                                                  R,D,C);                  38456000 T  0224:3
                            SEG0[15] ← T1 ← HEADER[7];                                     38457000 T  0228:0
                  L1:       DISKWAIT(-SKEL,[CF],30,T2);                                  38458000 T  0230:0
                            FORGETFSPDISK(T2);                                             38459000 T  0232:1
                            IF (T2←SKEL[29]) = 0 THEN GO TO L2;                            38460000 T  0233:0
IF(T3:=DISKADDRESS(MID,FID,FPB[FNUM+3],HEADER[7]:=  % (SHM)                                38461000 T  0235:0
                              (*P(DUP))+1,HEADER,0))=0 THEN                                38462000 T  0237:1
                                FILEMESS(="DISK   ","OVRFLOW",MID,FID,                     38463000 T  0240:3
                                                                  R,D,C);                  38464000 T  0240:3
                            SKEL[29] ← T3 ← HEADER[7];                                     38465000 T  0244:0
                            DISKWAIT(SKEL,[CF],30,                                         38466000 T  0246:0
                                   I←HEADER[T1 DIV HEADER[8]+10] +                         38467000 T  0247:2
```

```
                                        T1 MOD HEADER[8]);                                38468000 T  0249:1
                    T1 ← T3;                                                              38469000 T  0251:1
                    GO TO L1;                                                             38470000 T  0252:0
          L2:       DISKWAIT(SKEL,[CF],30,                                              38471000 T  0255:0
                          I←HEADER[T1 DIV HEADER[8]+10] +                                 38472000 T  0256:2
                                        T1 MOD HEADER[8]);                                38473000 T  0258:1
          L3:       SEG0[6] ← P(DUP,LOD,SSN); % "NEW FORMAT"                            38474000 T  0260:1
                    HEADER[4].[10:1]←1;%MARK AS PROGRAM FILE                            38475000 T  0262:0
                    DISKWAIT(SEG0,[CF],30,HEADER[10]);                                  38476000 T  0264:2
                  END COPY OF LABEL EQUATION CARDS;                                     38477000 T  0266:3
                                                                                                    38447000
               FORGETSPACE(SEG0);                                                       38478000 T  0266:3
               IF HEADER[7]<HEADER[8]-1 THEN                                            38479000 T  0267:3
                 BEGIN FORGETUSERDISK(HEADER[10]+HEADER[7]+1,                           38480000 T  0269:2
                                      HEADER[7]-HEADER[8]+1);                           38481000 T  0272:0
                       HEADER[8] ← HEADER[7]+1;                                         38482000 T  0274:0
                 END;                                                                   38483000 T  0276:0
                                                                                                    38480000
               FOR T1:=-1 STEP 1 UNTIL 4 DO                                             38484000 T  0276:0
DUMMY ::       IF P(,OBJTYPE,T1,+,LOD)=ABS(JAR[P1MIX,0]) THEN                           38485000 T  0277:0
                 HEADER[4].[36:6]:=T1+2;                                                38486000 T  0279:2
          END;                                                                          38488000 T  0285:1
                                                                                                    38433000
          HEADER[1]←FORMS&HEADER[3][6:30:18];                                           38489000 T  0285:1
           IF (HEADER[2]:=USERCODE[P1MIX]).[1:1] OR                                     38490000 T  0287:3
               MCP=NOT(-0) THEN HEADER[2]←0;                                            38491000 T  0289:3
         HEADER[5] := HEADER[6] := 0;                                                   38492000 T  0293:3
         IF COMPGO THEN                                                                 38494000 T  0296:0
          BEGIN PRT[P1MIX,@26]←IOD←GETESPDISK;                                          38495000 T  0296:1
               DISKWAIT(HEADER,[CF],30,IOD);                                            38496000 T  0299:1
               END ELSE                                                                 38497000 T  0301:1
                                                                                                    38495000
               BEGIN                                                                    38498000 T  0301:1
               ENTERUSERFILE(MID,FID,HEADER,[CF]-1);                                    38499000 T  0301:3
               END;                                                                     38500000 T  0304:2
                                                                                                    38498000
                    END;%                                                               38501000 T  0304:2
                                                                                                    38428000
            END;%                                                                       38502000 T  0304:2
                                                                                                    38427000
            IF REW AND NOT(LOCK OR REL OR TIME) THEN                                    38503000 T  0304:2
          BEGIN                                                                         38503200 T  0308:3
            IF HEADER[4] THEN                                                           38503400 T  0309:1
            IF WRITTENON THEN HEADER[4].[11:1]:=1;                                      38503600 T  0309:3
            STATE.[39:4]:=2;                                                            38503800 T  0314:0
          END ELSE                                                                      38504000 T  0315:3
                                                                                                    38503200
          BEGIN                                                                         38504500 T  0315:3
            HEADER[1]←FORMS&HEADER[3][6:30:18];                                         38505000 T  0316:1
             IF HEADER[4] THEN%FILE ALREADY EXISTS                                      38506000 T  0318:3
            BEGIN                                                                       38507000 T  0319:1
                 J:=WRITTENON OR HEADER[4].[11:1];                                      38507500 T  0319:3
$ SET OMIT = SHAREDISK                                                                  38507799 T  0322:3
                I←IF FIB[5].[1:1] OR NOT J THEN FIB[5].[13:3]+10 ELSE                   38507800 T  0322:3
                     (HEADER INX 0)&FIB[5][30:13:3];                                    38508000 T  0327:0
$ POP OMIT                                                                              38508001 T  0329:3
$ SET OMIT = NOT SHAREDISK                                                              38508599 T  0329:3
```

```
            IF(I←DIRECTORYSEARCH(MID,FID&J[3:47:1],I))≠0 THEN                    38509000 T  0329:3
                 IF PURGE THEN                                                   38510000 T  0333:0
                 IF M[I+4].[12:4]=0 THEN                                         38511000 T  0334:2
                 IF NOT SYSTEMFILE(MID,FID) THEN                                 38512000 T  0337:2
                 IF SECURITYCHECK(MID,FID,USERCODE[P1MIX],I).[45:1] THEN         38513000 T  0339:1
                    P(DIRECTORYSEARCH(-MID,FID,7),DEL);                          38515000 T  0342:0
                 IF I NEQ 0 THEN FORGETSPACE(I);                                 38516000 T  0344:1
       END ELSE%                                                                 38517000 T  0346:1
                                                                                              38507000
       IF NOT LOCK THEN%                                                         38518000 T  0346:1
       IF HEADER[4].[43:1] THEN P(DIRECTORYSEARCH(-MID,FID,7),DEL) ELSE          38518500 T  0347:2
    BEGIN                                                                        38519000 T  0351:1
 $ SET OMIT = NOT(DISKLOG)                                                       38520000 T  0351:3
       FOR I←10 STEP 1 UNTIL 29 DO%                                              38522000 T  0351:3
       IF HEADER[I]≠0 THEN FORGETUSERDISK(HEADER[I],-HEADER[8]);%                38523000 T  0353:0
    END;                                                                         38524000 T  0358:2
                                                                                              38519000
       FORGETSPACE(HEADER);                                                      38525000 T  0358:2
       STATF.[39:4]←1;%                                                          38526000 T  0359:2
    END;                                                                         38527000 T  0361:1
                                                                                              38504500
       IF NOT COBOL THEN FIB[4].[27:3]←3;                                        38528000 T  0361:1
       GO CLEANUP;%                                                              38529000 T  0364:3
OBJTYPE::: "BASIC  ",  %1%                                                       38530000 T  0365:1
           "ALGOL  ",  %2%                                                       38531000 T  0367:0
           "COBOL  ",  %3%                                                       38532000 T  0368:0
           "FORTRAN",  %4%                                                       38533000 T  0369:0
           "TSPOL  ",  %5%                                                       38534000 T  0370:0
           "XALGOL ",  %6%                                                       38535000 T  0371:0
                   0;  %DUMMY%                                                   38536000 T  0372:0
CLEANUP:                                                                         38537000 T  0373:0
       P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                                   38538000 T  0373:0
END DISK CLOSE;                                                                  38539000 T  0375:2
                                                                                              38356000
                                                                                SIZE= 0376 WORDS
```

```
                PROCEDURE BACKCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%                                  38540000 T  0000:0
                                                                                                 START OF REL SEGMENT; DISK ADDRESS = 00943
PRT(701) = BACKCLOSE
                BEGIN REAL RCW=+0,MSCW=-2;                                                               38541000 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                      ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%                                           38542000 T  0000:0
STACK(F+1) = FIB
STACK(F+2) = FPB
STACK(F+3) = HEADER
                      %%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP              38543000 T  0000:0
                      INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,                                     38544000 T  0000:0
STACK(F+4) = KIND
STACK(F+5) = NBUFS
STACK(F+6) = U
STACK(F+7) = BLEN
STACK(F+10) = CODE
                            UNLABELED=+9,COBOL=+10,I=+11,J=+12,                                          38545000 T  0000:0
STACK(F+11) = UNLABELED
STACK(F+12) = COBOL
STACK(F+13) = I
STACK(F+14) = J
                            FNUM=+13;                                                                    38546000 T  0000:0
STACK(F+15) = FNUM
                      REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;                        38547000 T  0000:0
STACK(F+16) = MID
STACK(F+17) = FID
STACK(F+20) = R
STACK(F+21) = D
STACK(F+22) = C
STACK(F+23) = FORMS
STACK(F+24) = STATE
                      LABEL AGAIN,EOF,EOT,CLOSEOUT,PBD,PUD;                                              38548000 T  0000:0
                      LABEL ZERODKADDR;                                          %175-                   38548010 C  0000:0
                      REAL STA=+21;%                                                                     38548100 T  0000:0
STACK(F+25) = STA
                      REAL T1=+22,T2=+23,T3=+24,IOD=+25;%                                                38549000 T  0000:0
STACK(F+26) = T1
STACK(F+27) = T2
STACK(F+30) = T3
STACK(F+31) = IOD
                      ARRAY SEGO=+26[*],SKEL=+27[*];                                                     38550000 T  0000:0
STACK(F+32) = SEGO
STACK(F+33) = SKEL
                      SUBROUTINE COOLOFF;%                                                               38552000 T  0000:0
                      BEGIN FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                                             38553000 T  0001:0
                            BEGIN IF NOT M[ALPHA+I].[19:1] THEN%                                         38554000 T  0005:1
                                        SLEEP([M[ALPHA+I]],IOMASK);%                                     38555000 T  0007:2
                                  IF KIND≠4 THEN                                                         38556000 T  0010:2
                                  IF M[ALPHA+I].[27:1] THEN GO TO EOF;%                                  38557000 T  0011:1
                            END;%                                                                        38558000 T  0014:2
                                                                                                                     38554000
                EOF:  END COOLOFF;%                                                                      38559000 T  0015:0
                                                                                                                     38553000
                      REAL T=+28,ACCESS=+29;%                                                            38561000 T  0015:1
STACK(F+34) = T
STACK(F+35) = ACCESS
```

```
                    BOOLEAN COMPGO=+30;                                                                  38562000 T  0015:1
STACK(F+36) = COMPGO
                    REAL TYPE=+31;                                                                       38562100 T  0015:1
STACK(F+37) = TYPE
                    DEFINE REW=CODE.[47:1]#,%                                                            38563000 T  0015:1
                           REL=CODE.[46:1]#,%                                                            38564000 T  0015:1
                           TIME=CODE.[45:1]#,%                                                           38565000 T  0015:1
                           LOCK=NOT CODE.[44:1]#,%                                                       38566000 T  0015:1
                           PURGE=NOT CODE.[43:1]#;%                                                      38567000 T  0015:1
                     $ SET OMIT = PACKETS                                                                38567950 T  0015:1
                         DEFINE TORFELNO = 42:42:6#;                                                     38568100 T  0015:1
                     $ POP OMIT OMIT                                                                     38568150 T  0015:1
                    %                                                                                    38569000 T  0015:1
                         SUBROUTINE CKBKUP;                                                              38570000 T  0015:1
                         BEGIN M[M[ALPHA]INX 17    ]←M[ALPHA]&(FIB[5]                 )[FTC];            38571000 T  0016:0
                               FIB[5]←P(DUP,LOD,0,1,CFX,+);                                              38572000 T  0020:1
                               IF NOT PRTROW[P1M;X].[7:1] THEN                                           38573000 T  0022:3
                               IF FIB[14].[CF]=FIB[14].[FF]                                              38573100 T  0024:0
                            THEN BEGIN PBIO(ALPHA,FIB[14]);SLEEP([M[ALPHA]],IOMASK)END ELSE              38574000 T  0025:3
                                                                                                                     38574000
                                 BEGIN; STREAM(S←          M[ALPHA],Z←FIB[14].[FF]);                     38575000 T  0031:3
                                      BEGIN S1←S; DS←18 WDS END;                                         38576000 T  0034:3
                                                                                                                     38576000
                                      FIB[14].[FF]←P(DUP).[FF]-18;                                       38577000 T  0035:2
                         END;     END;                                                                   38578000 T  0038:2
                                                                                                                     38575000
                                                                                                                     38571000
                         P(RCW,MSCW,STF);                                                                38580000 T  0038:3
                         RCW:=RCW&P(XCH)[CTC];                                                           38581000 T  0040:0
                            J←LOCK;                                                                      38581100 T  0041:1
                            IF T1←(FIB[9].[1:1] AND KIND=7) THEN % MULTI-REEL PBT FILE                   38581200 T  0042:3
                            BEGIN                                                                        38581300 T  0045:1
                                 FIB[9].[1:1]←0;                                                         38581400 T  0045:3
                                 COOLOFF;                                                                38581500 T  0048:1
                                 GO TO EOT;                                                              38581600 T  0049:0
                            END;                                                                         38581700 T  0049:2
                                                                                                                     38581300
                         IF M[FIB[14].[3:15] INX NOT 0] = 0 THEN %                          %175-         38581800 C  0049:2
                         BEGIN                                                              %175-         38581900 C  0052:2
                              I:=TYPE>20;                  % 1=PUD                         %175-         38581910 C  0053:0
                              R:=M[FIB[14].[3:15]+6];      % PB REEL NO,                    %175-         38581920 C  0054:1
                              GO TO ZERODKADDR;                                             %175-         38581930 C  0057:0
                         END;                                                               %175-         38581940 C  0057:2
                                                                                                                     38581900
                            IF FIB[17]<0 THEN                                                            38582000 T  0057:2
                            BEGIN M[ALPHA].[FF]←@60020; IF TYPE<20 THEN CKBKUP;                          38583000 T  0058:2
                            M[ALPHA],[18:1]←0; CKBKUP END%                                               38584000 T  0064:0
                                                                                                                     38583000
                                 ELSE IF FIB[17]<BLEN THEN%                                              38585000 T  0068:0
                         BEGIN IF NOT COBOL THEN FIB[17]←FIB[17]-(STATE.[46:2]=3);%                      38586000 T  0071:0
                               STREAM(N:=FIB[17],D:=M[ALPHA],[CF]);                                      38587000 T  0075:2
                                     BEGIN N(DS:=8 LIT " "); END;                                        38587500 T  0078:0
                                                                                                                     38587500
M[ALPHA]←FLAG(FIB[16]&0[20:47:1]); CKBKUP;                                                               38588000 T  0080:1
                         END ELSE COOLOFF;                                                               38589000 T  0084:0
                                                                                                                     38586000
                         M[ALPHA]←(*P(DUP))&(@60000)[CTF];                                 %150-         38590000 P  0086:0
```

```
IF TYPE<20 THEN                                                    %150-
   M[ALPHA]←(*P(DUP))&(IF SEPARATE THEN 1 ELSE @20)[27:42:6];      %150-
IF NOT UNLABELED THEN
BEGIN IF TYPE<20 THEN CKBKUP;
      M[ALPHA]←(*P(DUP))&2[18:45:3]&M[ALPHA-2][8:8:10];
      IF NOT SEPARATE THEN M[ALPHA]←(*P(DUP))&1[27:42:6];          %150-
      STREAM(L←M[ALPHA-2],B←M[ALPHA]); BEGIN SI←L; DS←17 WDS END;
END;                                                               %150-

IF NOT SEPARATE THEN M[ALPHA]←P(DUP,LOD)&1[27:42:6];               %150-
M[ALPHA].[20:1]←1;                                                 %150-
IF FIB[14].[FF]≠FIB[14].[CF] THEN                                  %150-
BEGIN CKBKUP; FIB[14].[FF]←P(DUP);END; CKBKUP;

IF KIND=12 THEN % PBD
BEGIN T←FIB[14].[3:15];
      IF (R:=M[T+7]×3) NEQ 0 THEN
      BEGIN IF R < PBDROWSZ THEN
      BEGIN FORGETUSERDISK(M[T+10]+R,PBDROWSZ-R+1);
            M[T+8]←R;
      END;

      END;                                                         %601-

      M[T+1]←M[T+3];
      STREAM(A←FPB[FNUM+2].[18:30],T←T+3);
      BEGIN SI←LOC A;DS←8 OCT;DI←DI-8;DS←2 LIT"+2";
            SI←T;SI←SI+5;DS←3 CHR;
      END;

      M[T+1].[6:18]←M[T+3].[30:18];
      IF I:=TYPE>20 THEN M[T+5].[3:1]:=0;
      R:=M[T+6];
$ SET OMIT = DATACOM AND RJE
      P(0);
$ POP OMIT
$ SET OMIT = NOT(DATACOM AND RJE )
      M[T+6]:=P(XCH);
      M[T+5].[2:1]←0;
      DISKWAIT(T,30,M[T-1]);
      D:=R&1[TOREELNO];
AGAIN:P(DIRECTORYSEARCH("(IF I THEN P(PUD) ELSE P(PBD)),D,14),
        DEL);
      IF D≠R THEN
      BEGIN STREAM(ONE:=1, D:=[D]);
            BEGIN SI:=LOC ONE; DS:=8 ADD END;

            GO AGAIN;
      END;

$ SET OMIT = NOT PACKETS
      IF (T1:=PSEUDOMIX[P1MIX])=0 THEN P(1) ELSE
      IF PACKETPAGE[T1-32]=0 THEN P(1) ELSE P(0);
      IF P OR I THEN                                               %105-
      BEGIN PBCOUNT:=PBCOUNT+1;
$ POP OMIT
```

```
38590100 C  008811
038590200 C 008910
38591000 T  009411
38591100 T  009413
38592000 T  009810
38592100 C  010310
38593000 T  010711
                  38593000
38594000 P  011110
                  38591100
38594100 C  011110
38594200 C  011511
38594300 C  011810
38595000 T  012011
                  38595000
38596000 T  012510
38597000 T  012513
38598000 T  012713
38598100 T  013013
38599000 T  013210
38600000 T  013611
38601000 T  013811
                  38599000
38601100 C  013811
                  38598100
38602000 T  013811
38603000 T  014112
38604000 T  014411
38605000 T  014512
38606000 T  014611
                  38604000
38607000 T  014612
38607100 T  015112
38607200 T  015612
38607299 T  015812
38607300 T  015812
38607301 T  015813
38607399 T  015813
38607900 T  015813
38607950 T  016013
38608000 T  016410
38608100 T  016612
38608200 T  016811
38608300 T  017111
38608400 T  017112
38608500 T  017211
38608600 T  017313
                  38608600
38608700 T  017412
38608800 T  017610
                  38608500
38608890 T  017610
38608900 T  017610
38608910 T  017811
38608920 P  018211
38609000 T  018213
38609010 T  018412
```

```
                IF AUTOPRINT                                                                    38609100 T  0184:2
 $ SET OMIT = NOT RJF                                                                           38609190 T  0184:2
                  THEN P(PRINTORPUNCHWAIT(R&1[32:32:16],I                                       38609300 T  0184:2
 $ SET OMIT = NOT RJF                                                                           38609390 T  0187:1
                              ), DEL);                                                          38609500 T  0187:1
 $ SET OMIT = NOT PACKETS                                                                       38609590 T  0188:0
            END;                                                                                38609600 T  0188:0
                                                                                                        38609000
 $ POP OMIT                                                                                     38609610 T  0188:0
ZERODKADDR:                                                                          %175-      38609700 C  0188:0
 $ SET OMIT = PACKETS                                                                           38609999 T  0188:0
            FILEMESSAGE((IF I THEN P(PUD) ELSE P(PBD))&R[24:6:24],                              38610100 T  0188:0
                        ("REL    ")&R[30:30:18],MID,FID,                                        38610200 T  0191:0
                        FIB[7],0,0,(PBDREL OR CLOSEMESS));                                      38610250 T  0192:3
            FORGETSPACE(FIB[14],[3:15]); FIB[14],[3:15]:=0;                                     38610600 T  0195:3
      END       ELSE                                                                            38622000 T  0199:3
                                                                                                        38597000
EOT:  BEGIN T←@1737000000000000;                                                                38623000 T  0199:3
            J←WAITIO([T],@40,U)≠0 OR J;                                                         38624000 T  0202:3
            I := SPACE(8);                                                                      38625000 T  0205:2
            STREAM(PN:=TYPE GEQ 20,D:=0,I);                                                     38626000 T  0207:3
            BEGIN                                                                               38626100 T  0209:2
                 DS:=24LIT" LABEL  OPBTMCP OBACK-UP";                                           38626200 T  0209:2
                 PN(D:=DI; DI:=DI-14; DS:=2LIT"UT"; DI:=D);                                     38626300 T  0212:3
                 20(DS:=2LIT"  ");                                                              38626400 T  0214:3
            END;                                                                                38626500 T  0215:3
                                                                                                        38626100
      IF NOT UNLABELED THEN M[I+4]←M[M[ALPHA-2] INX 4],[42:6];                                  38628000 T  0216:0
      M[I+3]←T1; % MARK ENDING TAPE LABEL FOR MULTI-REEL COND.                                  38628100 T  0222:0
      J←WAITIO(,&8[8:38:10]&5[21:45:3],@40,U)≠0 OR J;%                                          38629000 T  0224:0
      FORGETSPACE(1);%                                                                          38630000 T  0228:3
      FOR I←0 STEP 1 UNTIL 1 DO%                                                                38631000 T  0229:2
           P(WAITIO(@1000000340000005,@40,U),DEL);%                                             38632000 T  0232:0
      IF (TWO(U) AND SAVEWORD)≠0 THEN%                                                          38633000 T  0235:3
           SETNOTINUSE(U,0) ELSE                                                                38634000 T  0237:2
BEGIN%                                                                                          38635000 T  0239:0
     RDCTABLE[U]←(*P(DUP))&0[8:8:6]&R[14:38:10];                                                38637000 T  0241:0
     PRNTABLE[U],[15:15]←0;                                                                     38638000 T  0244:2
     RRRMECH:=NOT TWO(U) AND RRRMECH;                                                           38638500 T  0247:0
     IF J THEN SETNOTINUSE(U,0) ELSE LABELTABLE[U],[1:5]←1;                         %717-       38640000 P  0249:0
      END; END;                                                                                 38641000 T  0253:3
                                                                                                        38635000
                                                                                                        38623000
STATE.[FF]←0;                                                                                   38642000 T  0253:3
      GO CLOSEOUT;%                                                                             38643000 T  0255:0
PBD:::   "PBD    ";                                                                             38644000 T  0255:2
PUD:::   "PUD    ";                                                                             38644500 T  0257:0
CLOSEOUT:                                                                                       38645000 T  0258:0
      P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                                                   38646000 T  0258:0
END BACK CLOSE;                                                                                 38647000 T  0260:2
                                                                                                        38541000
                                                                                                SIZE= 0261 WORDS
```

```
                PROCEDURE OTHERCLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%                    38648000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00952
PRT(702) = OTHERCLOSE
                BEGIN REAL RCW=+0,MSCW=-2;                                                  38649000 T  0000:0
STACK(F+0) = RCW
STACK(F-2) = MSCW
                      ARRAY FIB=+1[*],FPB=+2[*],HEADER=+3[*];%                              38650000 T  0000:0
STACK(F+1) = FIB
STACK(F+2) = FPB
STACK(F+3) = HEADER
                   %%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP    38651000 T  0000:0
                      INTEGER KIND=+4,NBUFS=+5,U=+6,BLEN=+7,CODE=+8,                        38652000 T  0000:0
STACK(F+4) = KIND
STACK(F+5) = NBUFS
STACK(F+6) = U
STACK(F+7) = BLEN
STACK(F+10) = CODE
                              UNLABELED=+9,COBOL=+10,I=+11,J=+12,                           38653000 T  0000:0
STACK(F+11) = UNLABELED
STACK(F+12) = COBOL
STACK(F+13) = I
STACK(F+14) = J
                              FNUM=+13;                                                     38654000 T  0000:0
STACK(F+15) = FNUM
                      REAL MID=+14,FID=+15,R=+16,D=+17,C=+18,FORMS=+19,STATE=+20;           38655000 T  0000:0
STACK(F+16) = MID
STACK(F+17) = FID
STACK(F+20) = R
STACK(F+21) = D
STACK(F+22) = C
STACK(F+23) = FORMS
STACK(F+24) = STATE
                       REAL STA=+21;%                                                       38655100 T  0000:0
STACK(F+25) = STA
                       REAL T1=+22,T2=+23,T3=+24,IOD=+25;%                                  38656000 T  0000:0
STACK(F+26) = T1
STACK(F+27) = T2
STACK(F+30) = T3
STACK(F+31) = IOD
                      ARRAY SEGO=+26[*],SKEL=+27[*];                                        38657000 T  0000:0
STACK(F+32) = SEGO
STACK(F+33) = SKEL
                      REAL T=+28,ACCESS=+29;%                                               38658000 T  0000:0
STACK(F+34) = T
STACK(F+35) = ACCESS
                      BOOLEAN COMPGO=+30;                                                   38659000 T  0000:0
STACK(F+36) = COMPGO
                      LABEL PX;                                          %905-              38660000 P  0000:0
                      LABEL CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,CC;                   38661000 T  0000:0
                      SWITCH SW:=CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,BKUP;            38662000 T  0000:0
                      LABEL EOF,ON,DNE,CLEANUP;%                                            38663000 T  0000:0
                      LABEL EOD;                                                            38664000 T  0000:0
                      SUBROUTINE COOLOFF;%                                                  38665000 T  0000:0
                      BEGIN FOR I:=0 STEP 1 UNTIL NBUFS-1 DO%                               38666000 T  0001:0
                            BEGIN IF NOT M[ALPHA+I].[19:1] THEN%                            38667000 T  0005:1
                                        SLEEP([M[ALPHA+I]],IOMASK);%                        38668000 T  0007:2
                                  IF KIND#4 THEN                                            38669000 T  0010:2
```

```
                IF M[ALPHA+1],[27:1] THEN GO TO EOF;%                                38670000 T  0011:1
            END;%                                                                    38671000 T  0014:2
                                                                                                 38667000
FOF:    END COOLOFF;%                                                                38672000 T  0015:0
                                                                                                 38666000
        DEFINE REW=CODE.[47:1]#,%                                                    38674000 T  0015:1
               REL=CODE.[46:1]#,%                                                    38675000 T  0015:1
               TIME=CODE.[45:1]#,%                                                   38676000 T  0015:1
               LOCK=NOT CODE.[44:1]#,%                                               38677000 T  0015:1
               PURGE=NOT CODE.[43:1]#;%                                              38678000 T  0015:1
        SUBROUTINE EMPTY;%                                                           38680000 T  0015:1
        IF FIB[17]<BLEN AND (STATE.[46:2]#0 OR KIND=1) THEN                          38681000 T  0016:0
        BEGIN IF NOT COBOL THEN FIB[17]←FIB[17]-(STATE.[46:2]=3);%                   38682000 T  0019:2
              STREAM(KIND.N:=FIB[17].D:=M[ALPHA].[CF]);                              38683000 T  0024:0
              BEGIN SI←LOC KIND; SI←SI+7;%                                           38684000 T  0026:3
                    IF SC="2" THEN DS←LIT "←" ELSE%                                  38685000 T  0027:1
                    IF SC="5" THEN DS←LIT "←" ELSE N(DS←8 LIT " ");%                 38686000 T  0028:2
              END;%                                                                  38687000 T  0031:3
                                                                                                 38684000
              P(WAIT!O(FIB[16]&(BLEN=FIB[17]×(KIND=2))[8:38:10]%                     38688000 T  0032:0
                                          ,@40,U),DEL);%                             38689000 T  0034:3
              FIB[6]←FIB[6]+1;                                                       38690000 T  0036:2
        END ELSE COOLOFF;%                                                           38691000 T  0038:2
                                                                                                 38682000
        LABEL CLOSEOUT;%                                                             38692000 T  0040:1
        LABEL EOF!T;%                                                                38693000 T  0040:1
        P(RCW,MSCW,STF);                                                             38695000 T  0040:1
        RCW:=RCW&P(XCH)[CTC];                                                        38696000 T  0042:0
        GO TO SW[KIND];                                                              38697000 T  0043:1
CR:     COOLOFF; BLASTQ(U);%                                                         38699000 T  0050:3
        IF I≥NBUFS THEN DO UNTIL WAIT!O(M[ALPHA-2],@40,U)#0 ELSE%                    38700000 T  0052:3
        BEGIN I←M[ALPHA+1].[33:15];%                                                 38701000 T  0057:2
              T←FIB[16].[33:15]-2;%                                                  38702000 T  0060:2
              FOR J←1 STEP 1 UNTIL NBUFS DO%                                         38703000 T  0062:2
              BEGIN IF (I>T) AND (I≤(T+BLEN+1)) THEN GO ON;%                         38704000 T  0064:0
                    T←M[T].[18:15]-2;%                                               38705000 T  0067:2
              END;%                                                                  38706000 T  0070:0
                                                                                                 38704000
        ON:   MOVE(10,T+2,M[ALPHA-2]);%                                              38707000 T  0072:1
        END;%                                                                        38708000 T  0075:2
                                                                                                 38701000
        IF JAR[P1MIX,0]<0 THEN%                                                      38709000 T  0075:2
        IF PRT[P1MIX,@25]#0 THEN%                                                    38710000 T  0077:0
DNE:    BEGIN STREAM(I: F←"ENDPACK", D←M[ALPHA-2]);%                                 38711000 T  0079:0
              BEGIN SI←D;%                                                           38712000 T  0082:1
              L:    SI←SI+1; IF SC=" " THEN GO TO L;%                                38713000 T  0082:2
                    DI←LOC E; DI←DI+1;                                               38714000 T  0083:2
                    IF 3 SC=DC THEN TALLY←1;                                         38715000 T  0084:0
 $ SET OMIT = NOT(PACKETS)                                                           38715099 T  0084:3
                    IF TOGGLE THEN ELSE                                              38715100 T  0084:3
                    BEGIN SI←SI-3; IF 4 SC=DC THEN TALLY←1; END;                     38715200 T  0085:1
                                                                                                 38715200
 $ POP OMIT                                                                          38715201 T  0086:1
                    I←TALLY;%                                                        38716000 T  0086:1
              END;%                                                                  38717000 T  0086:2
                                                                                                 38712000
              IF NOT P THEN%                                                         38718000 T  0086:3
```

```
                BEGIN BLASTQ(U);%                                                    38719000 T  0087:0
                      DO UNTIL WAITIO(M[ALPHA=2],@40,U)#0;%                          38720000 T  0088:1
                      GO TO DNE;%                                                    38721000 T  0091:3
                END;%                                                                38722000 T  0094:0
                                                                                                 38719000
          END;%                                                                      38723000 T  0094:0
                                                                                                 38711000
          BLASTQ(U);                                                                 38724000 T  0094:0
CC::                                                                                 38725000 T  0094:3
          M[M[ALPHA=2] INX NOT 3].[9:6]:=0;                                          38726000 T  0094:3
          LABELTABLE[U]←-@14;                                                        38730000 T  0099:3
          RDCTABLE[U]←0;                                                             38731000 T  0101:1
           IF 32≤U AND U≤63 THEN PSEUDOCOPY←PSEUDOCOPY+1;                            38732000 T  0102:2
          INDEPENDENTRUNNER(P(..CONTROLCARD),(M[ALPHA=2],[CF])&                      38732100 T  0106:0
 $ SET OMIT = NOT(DATACOM AND RJE )
                                                U[2:42:6]&JAR[P1MIX,6][1:1:1],       38732199 T  0108:2
                                                192);                                38732300 T  0108:2
                                                                                     38732400 T  0111:1
          GO CLOSEOUT;%                                                              38733000 T  0111:3
CP:       EMPTY;%                                                                    38735000 T  0112:1
          IF NOT UNLABELED THEN P(WAITIO(M[ALPHA=2],0,U),DEL);%                      38736000 T  0113:0
          SETNOTINUSE(U,FORMS OR PUNCHLOCK);                                         38737000 T  0116:3
          GO CLOSEOUT;%                                                              38738000 T  0118:3
LP:       EMPTY;%                                                                    38740000 T  0119:1
          IF SEPARATE THEN P(WAITIO(@4000100000,0,U),DEL)          %150-             38741000 P  0120:0
                      ELSE P(WAITIO(@4002000000,0,U),DEL);         %150-             38741100 C  0122:3
          IF NOT UNLABELED THEN P(WAITIO(M[ALPHA=2],0,U),DEL);%                      38742000 T  0126:2
          IF NOT SEPARATE THEN P(WAITIO(@4000100000,0,U),DEL);     %150-             38742100 C  0130:1
          SETNOTINUSE(U,FORMS);                                                      38743000 T  0133:1
          GO CLOSEOUT;%                                                              38744000 T  0134:1
SP:       IF STATE.[43:1] THEN COOLOFF ELSE EMPTY;%                                  38746000 T  0137:0
          GO CLOSEOUT;%                                                              38747000 T  0141:0
MT:       IF NOT STATE.[41:1] THEN%                                                  38749000 T  0141:2
          BEGIN IF STATE.[43:1] THEN%                                                38750000 T  0142:2
                BEGIN COOLOFF; BLASTQ(U);%                                           38751000 T  0143:3
                      IF NOT REW THEN                                                38752000 T  0145:3
                      BEGIN T←@1000000140000005&STATE[22:44:1];%                     38753000 T  0146:3
                     IF I≥NBUFS THEN DO UNTIL WAITIO(T,@377,U).[42:1];               38754000 T  0149:0
                           IF NOT UNLABELED THEN                                     38754100 T  0152:2
                           P(WAITIO(T,@377,U),DEL);                                  38755000 T  0153:0
                      END;%                                                          38756000 T  0155:0
                                                                                                 38753000
                END ELSE%                                                            38757000 T  0155:0
                                                                                                 38751000
                BEGIN EMPTY;%                                                        38758000 T  0155:0
EOFIT:                T←@1737000000000000;%                                         38759000 T  0158:0
                      P(WAITIO([T],@40,U),DEL);%                                     38760000 T  0158:3
                      IF NOT UNLABELED THEN%                                         38761000 T  0160:1
                      BEGIN;STREAM(BC←FIB[6],RC←FIB[7],D←M[ALPHA=2]);%               38762000 T  0160:3
                            BEGIN SI←LOC BC; DI←DI+40;%                              38763000 T  0164:1
                                  DS←5 DEC; DS←7 DEC;%                               38764000 T  0164:3
                            END;%                                                    38765000 T  0165:1
                                                                                                 38763000
                            P(WAITIO(M[ALPHA=2],@40,U),DEL);%                        38766000 T  0165:2
                            P(WAITIO([T],@40,U),DEL);%                               38767000 T  0168:1
                            T←@1000000340000005;%                                    38768000 T  0169:3
                            P(WAITIO(T,@40,U) ,DEL);%                                38769000 T  0170:2
                      END;%                                                          38770000 T  0172:0
```

```
                    END;%                                                                                38771000 T  0172:0
                                                                                                                    38762000
                                                                                                                    38758000
                END ELSE%                                                                                38772000 T  0172:0
                                                                                                                    38750000
                IF FIB[18],[1:1]THEN BEGIN FIB[18],[1:1]←FIB[16]←0;                                      38773000 T  0172:0
                                           FIB[10],[3:15]:=0; GO EOFIT END;                              38773100 T  0180:0
                                                                                                                    38773000
                IF REW THEN%                                                                             38774000 T  0183:0
                BEGIN P(WAITIO(@4200000000,@377,U),DEL);%                                                38775000 T  0183:3
                      STATE.[40:1]←0;%                                                                   38776000 T  0185:3
                END ELSE STATE.[40:1]←NOT STATE.[44:1];%                                                 38777000 T  0187:2
                                                                                                                    38775000
PX:             IF REL THEN%                                                                             38778000 T  0191:2
                BEGIN SETNOTINUSE(U,0);                                                                  38779000 T  0192:1
                      STATE.[41:2]←1;%                                                                   38780000 T  0193:3
                END ELSE STATE.[41:2]←2;%                                                                38781000 T  0195:2
                                                                                                                    38779000
                IF LOCK THEN%                                                                            38782000 T  0197:3
                BEGIN SETNOTINUSE(U,1);                                                                  38783000 T  0198:3
                      STATE.[41:2]←1;%                                                                   38784000 T  0200:1
                END;%                                                                                    38785000 T  0202:0
                                                                                                                    38783000
                IF U LSS 16 THEN                                                                         38786000 T  0202:0
                IF PURGE THEN%                                                                           38787000 T  0202:3
                BEGIN IF PRNTABLE[U]<0 THEN%                                                             38788000 T  0204:1
                       BEGIN RDCTABLE[U].[8:6]←0;                                    %538-               38788500 C  0205:3
                       INDEPENDENTRUNNER(P(.PURGEIT),U,64)                                               38789000 T  0208:3
                       END                                                           %538-               38789050 C  0209:3
                                                                                                                    38788500
                       ELSE SETNOTINUSE(U,0);                                                            38789100 T  0210:0
                      STATE.[41:2]←1;%                                                                   38790000 T  0211:2
                END;%                                                                                    38791000 T  0213:1
                                                                                                                    38788000
                GO TO CLEANUP;%                                                                          38792000 T  0213:1
PP::            IF NOT STATE.[41:1] THEN%                                                                38794000 T  0213:3
                BEGIN EMPTY; P(WAITIO(@2004500000000,@40,U),DEL) END;%                                   38795000 T  0215:0
                                                                                                                    38795000
                GO TO PX;                                                                                38796000 T  0218:2
PR::            IF NOT STATE.[41:1] THEN BEGIN COOLOFF; BLASTQ(U) END;%                                  38798000 T  0220:0
                                                                                                                    38798000
                IF REW THEN P(WAITIO(@1034000000,@377,U),DEL);%                                          38799000 T  0223:3
                GO TO PX;%                                                                               38800000 T  0226:2
CD::                                                                                                     38802000 T  0228:0
                IF M[ALPHA],[27:1] THEN MOVE(10,FIB[16],[33:15],M[ALPHA-2]) ELSE                         38803000 T  0228:0
EOD:            DO UNTIL READFMFROMDISK(CIDROW[U-32],M[ALPHA-2]);                                        38804000 T  0233:2
 $ SET OMIT = PACKETS                                                                                    38804999 T  0237:2
                IF JAR[P1MIX,0]<0 AND PRT[P1MIX,21]≠0 OR JAR[P1MIX,1]<0 THEN                             38806000 T  0237:2
                BEGIN                                                                                    38806050 T  0242:2
 $ SET OMIT = NOT(PACKETS)                                                                               38806099 T  0243:0
                  PACKETERR[U-32]:=TRUE;                                                                 38806200 T  0243:0
                  IF CIDTABLE[U-32,3] LEQ CIDTABLE[U-32,7] THEN                                          38806300 T  0246:0
 $ POP OMIT                                                                                              38806301 T  0249:1
                BEGIN STREAM(F←"ENDWAIT"; Q←@14, D←M[ALPHA-2]);                                          38807000 T  0249:1
                      BEGIN S1←LOC Q; S1←S1+7; IF SC≠DC THEN DI←DI+1; Q←DI; SI←Q;                         38808000 T  0252:2
                         L: IF SC=" " THEN BEGIN SI←SI+1; GO TO L END;                                   38809000 T  0254:1
                                                                                                                    38809000
```

```
                    DI←LOC E; DI←DI+1; IF 3 SC≠DC THEN TALLY←1;
 $ SET OMIT = NOT(PACKETS)
                    IF TOGGLE THEN
                    BEGIN SI←SI-3; IF 4 SC=DC THEN TALLY←0; END;

 $ POP OMIT
                    E←TALLY;
               END;

               IF P THEN GO TO EOD;
          END;

          END;

          KIND←0;
          GO TO CC;
CLOSEOUT:;  STATE.[39:4]←1; TIME←1;%
CLEANUP:; CLOSED; DK; BKUP; DC;
     P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);
END OTHER CLOSE;
```

```
38810000 T  0255:1
38810099 T  0256:2
38810100 T  0256:2
38810200 T  0256:3
                    38810200
38810201 T  0257:3
38810500 T  0257:3
38811000 T  0258:0
                    38808000
38812000 T  0258:1
38813000 T  0259:0
                    38807000
38813100 T  0259:0
                    38806050
38814000 T  0259:0
38815000 T  0259:3
38817000 T  0262:0
38818000 T  0265:2
38819000 T  0266:0
38820000 T  0268:2
                    38649000
                SIZE= 0269 WORDS
```

```
                PROCEDURE FILEOPEN(XTRA,ALPHA);                                                 39000000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00961
                    VALUE ALPHA,XTRA; INTEGER ALPHA,XTRA;                                       39000100 T  0000:0
                BEGIN REAL RCW=+0;%                                                             39001000 T  0000:0
STACK(F+0) = RCW
                    REAL IOM=IOMASK, IOMASK;                                                    39001100 T  0000:0
PRT(362) = IOM
STACK(F+1) = IOMASK
                    REAL XTRAR=-4,XTRAC=-6;                                                     39001200 T  0000:0
STACK(F-4) = XTRAR
STACK(F-6) = XTRAC
                    INTEGER NBUFS,FNUM,RLEN,TYPE,IO,BLEN,U,KIND,                                39002000 T  0000:0
STACK(F+2) = NBUFS
STACK(F+3) = FNUM
STACK(F+4) = RLEN
STACK(F+5) = TYPE
STACK(F+6) = IO
STACK(F+7) = BLEN
STACK(F+10) = U
STACK(F+11) = KIND
                        MODE,DIREC,FORMS,COBOL,UNLABELED,OPTIONAL,CNTCTL;                       39003000 T  0000:0
STACK(F+12) = MODE
STACK(F+13) = DIREC
STACK(F+14) = FORMS
STACK(F+15) = COBOL
STACK(F+16) = UNLABELED
STACK(F+17) = OPTIONAL
STACK(F+20) = CNTCTL
                    REAL T1,T2,MASK,STATE;                                                      39004000 T  0000:0
STACK(F+21) = T1
STACK(F+22) = T2
STACK(F+23) = MASK
STACK(F+24) = STATE
                    REAL MFID,FID; INTEGER REEL,CDATE,CYCLE; %KEEP THESE TOGETHER               39004100 T  0000:0
STACK(F+25) = MFID
STACK(F+26) = FID
STACK(F+27) = REEL
STACK(F+30) = CDATE
STACK(F+31) = CYCLE
                    ARRAY FIB[*],FPB[*];%                                                       39005000 T  0000:0
STACK(F+32) = FIB
STACK(F+33) = FPB
                    INTEGER ACCESS,FIB7;                                                        39006000 T  0000:0
STACK(F+34) = ACCESS
STACK(F+35) = FIB7
                    LABEL DCIN,PBS;                                                             39006100 T  0000:0
                   LABEL DC19;                                                                  39006800 T  0000:0
                    LABEL DKRN,SPN,DKSN,DKUN,DKPN,DCN;                                          39007000 T  0000:0
                    SWITCH INSW←DKRN,SPN,DKSN,DKUN,DCIN;                                        39008000 T  0000:0
                    LABEL LOOK,EXIT,LOOKOUT,LPS,FINALIN,FINALOUT,SPDC;%                         39009000 T  0000:0
                    REAL SUBROUTINE DSED; DSED:=TERMSET(PIMIX);                                 39009050 T  0000:0
                    REAL SUBROUTINE CNTLBITS;%                                                  39026000 T  0003:0
                          CNTLBITS←IOMASK&MODE[21:47:1]&DIREC[22:47:1]&CNTCTL[23:47:1]          39027000 T  0003:0
                                &IO[24:47:1]&(KIND=7 OR KIND>9 AND KIND≤12)[20:47:1]            39028000 T  0005:2
                                &(IF KIND=10R KIND=70R KIND=12THEN@20ELSE 0)[27:42:6];          39029000 T  0010:0
                    SUBROUTINE MAKEIODS;%                                                       39031000 T  0015:0
                    BEGIN FIB[16]←T1←((BLEN-1)×DIREC+M[ALPHA])&CNTLBITS[18:18:15]%               39032000 T  0017:0
```

```
                    &(IF BLEN≤1023 THEN BLEN ELSE 1023)[8:38:10]%                                  39033000 T  0021:0
                    &TINU[IF (KIND=7 OR KIND=12) THEN IF TYPE<20                                   39034000 T  0023:2
                          THEN 20 ELSE 22 ELSE                                                     39034050 T  0026:3
                          IF KIND=11 THEN 23 ELSE U][3:3:5] OR M;                                  39034100 T  0029:1
               FIB[19]←(IF STATE.[46:2]=0 THEN (DIREC INX T1)%                                     39035000 T  0034:0
                          &(2×DIREC+(BLEN>1023)+1)[3:43:5] ELSE%                                   39036000 T  0037:0
                    IF STATE.[46:2]=1 THEN ((NOT RLEN INX 2)×DIREC INX T1)                         39037000 T  0040:2
                          &RLEN[8:38:10]&(3×DIREC+2)[3:43:5] ELSE%                                 39038000 T  0043:3
                      (1-DIREC INX T1)&RLEN[8:38:10]&(DIREC+6)[3:43:5])%                           39039000 T  0047:3
                     &IO[25:47:1];%                                                                39040000 T  0051:2
               IF NOT (IO OR COBOL)THEN%                                                           39041000 T  0053:0
                    T1←FIB[19]&T1[3:3:5]&0[25:25:1];%                                              39042000 T  0054:0
               FIB[10].[3:15]←M[ALPHA]-2;   %HEAD OF BUFFER RING                                   39042100 T  0057:2
               T2←T1.[33:15]←M[ALPHA];%                                                            39043000 T  0061:1
               FOR MASK←0 STEP 1 UNTIL NBUFS-1 DO%                                                 39044000 T  0063:3
               BEGIN                                                          %P                   39045000 T  0068:0
               M[ALPHA+MASK]←FLAG((P(DUP,LOD)+T2)&P(T1,XCH)[33:33:15]);%                            39046000 T  0068:0
               END;%                                                                               39047000 T  0071:3
                                                                                                                   39045000
          END MAKEIODS;%                                                                           39048000 T  0072:1
                                                                                                                   39032000
          LABEL DKRO,SPO,DKSO,DKUO,DKPO,DCO;                                                       39049000 T  0072:2
          SWITCH OUTSW←DKRO,SPO,DKSO,DKUO,DCO;%                                                    39050000 T  0072:2
          LABEL FIXFIB,FIND,SPACER;%                                                               39054000 T  0072:2
          LABEL PREFINAL,DK1;%                                                                     39055000 T  0072:2
          ARRAY HEADER[*];%                                                                        39056000 T  0072:2
STACK(F+36) = HEADER
          REAL TOG;                                                                                39056100 T  0072:2
STACK(F+37) = TOG
          LABEL AGN;                                                                               39056500 T  0072:2
          FIB←M[ALPHA-3]; FPB←PRT[P1MIX,3];%                                                       39083000 T  0072:2
          TOMASK:=TOM;                                                                             39083100 T  0084:1
          NBUFS←FIB[13].[1:9]; FNUM←FIB[4].[13:11]; BLEN←FIB[18].[3:15];%                          39084000 T  0085:0
          TYPE←FPB[FNUM+3].[43:5];%                                                                39085000 T  0089:2
          STREAM(S ← [FPB[FNUM+2]], D ← [REEL]);%                                                  39086000 T  0091:2
           BEGIN SI:=S;DS:=3OCT;DS:=5OCT;DS:=OCT END;%                                             39087000 T  0093:1
                                                                                                                   39087000
          P(CDATE, RSB, .CDATE,←);                                                                 39087100 T  0094:2
          IF FPB[FNUM+4]>0 THEN REEL ← CDATE ← CYCLE ← 0;                                          39087500 T  0095:2
          MODE←FIB[13].[24:1]; IO←FIB[13].[27:1]; RLEN←FIB[18].[33:15];%                           39088000 T  0099:1
          DIREC←FIB[13].[25:1]; FORMS←FPB[FNUM+3].[42:1];%                                         39089000 T  0103:3
          STATE←FIB[5];  UNLABELED←FIB[4].[2:1];                                                   39090000 T  0107:1
          MFID←FPB[FNUM]; FID←FPB[FNUM+1]; OPTIONAL←FIB[4].[5:1];%                                 39091000 T  0109:3
          COBOL←(FIB[13] AND 1)&([FIB].[8:10]=22)[1:47:1];  % COBOL 60 & 68                         39091100 T  0113:3
         KIND←FIB[4].[8:4]; IF FIB[13].[28:10]≠0 THEN REEL←FIB[13].[28:10];                        39092000 P  0117:2
          IF COBOL>0 OR FIB[4].[7:1] THEN     % COBOL 60 OR SORT                                    39092010 T  0122:2
          MFIB INX NOT 1].[3:6]←2                                                                  39092020 T  0124:2
          ELSE M[ALPHA-7].[3:6]←2;                                                                 39092030 T  0126:3
     $ SET OMIT = NOT(DATACOM AND RJE )                                                            39092039 T  0132:2
          IF TYPE=19 THEN GO TO DC19 ELSE                                                          39092045 T  0132:2
          IF TYPE=26 THEN GO TO DKPN ELSE                                                          39092050 T  0133:1
          IF TYPE>26 THEN GO TO DCN;                                                               39092055 T  0134:2
          IF (TYPE=0 AND NOT IO) OR TYPE GTR 20 THEN                                               39092060 T  0136:1
          BEGIN IF USEPBD                                                                          39092070 T  0138:3
     $ SET OMIT = NOT(DATACOM AND RJE )                                                            39092074 T  0139:1
               THEN TYPE:=22; GO TO LOOKOUT;                                                       39092080 T  0139:1
          END;                                                                                     39092090 T  0141:3
```

```
                                                                                                                    39092070
      IF TYPE=1 OR TYPE=4 OR (TYPE>14 AND TYPE<19) THEN                                                39092100 T  0141:3
      BEGIN IF USEPBD                                                                                  39092150 T  0145:2
 $ SET OMIT = NOT(DATACOM AND RJE )                                                                    39092154 T  0146:0
            THEN TYPE:=15;                                                                            39092160 T  0146:0
 $ SET OMIT = NOT(PACKETS)                                                                             39092164 T  0148:0
IF (T1:=PSEUDOMIX[P1MIX])≠0 THEN IF PACKETPAGE[T1-32]≠0 THEN       %107-                              39092165 P  0148:0
            IF FORMS THEN FPB[FNUM+3].[23:1]:=1 ELSE     % SETS FREEF                                  39092170 T  0152:0
            IF NOT FPB[FNUM+3].[23:1] THEN TYPE:=15;                                                  39092175 T  0156:1
 $ POP OMIT                                                                                            39092180 T  0159:3
          GO LOOKOUT;                                                                                 39092185 T  0159:3
      END;                                                                                            39092190 T  0160:1
                                                                                                                    39092150
      IF REEL=0 THEN REEL←1;                                                                          39092200 T  0160:1
      IF IO THEN                                                                                      39092500 T  0162:1
         IF TYPE≠6 AND TYPE≠20 THEN                                                                   39093000 T  0162:2
           IF TYPE≥10 THEN GO TO INSW[TYPE-10] ELSE GO LOOK                                           39093500 T  0164:3
         ELSE GO TO DCN;                                                                              39094000 T  0170:2
      IF TYPE≥10 AND TYPE≠20 THEN GO TO OUTSW[TYPE-10] ELSE GO LOOKOUT;                               39094500 T  0170:2
LOOK: IF IO THEN OTHERFILEOPENIN(1) ELSE OTHERFILEOPENOUT(1);                                         39095000 T  0176:3
      IF U LSS 0 THEN GO TO EXIT ELSE GO TO PREFINAL;                                                 39096000 T  0179:2
DCN:  FILEMESS(-"I/O ERR",0,MFID,FID,REEL,CDATE,CYCLE);%                                              39143000 T  0181:1
      GETBUFFERS(BLEN,NBUFS, U,ALPHA);%                                                               39144000 T  0184:0
PREFINAL::  MAKEIODS;%                                                                                39145000 T  0185:2
      IF KIND=11 THEN                                                                                 39145100 T  0187:0
      BEGIN IF COBOL ≤ 0 THEN          % ALGOL OR COBOL68                                            39145200 T  0187:3
            IF READEMFROMDISK(CIDROW[U-32],M[ALPHA]) THEN                                             39145210 T  0189:0
                M[ALPHA]←P(DUP,LOD)&0[2:2:1]&1[27:47:1];                                              39145300 T  0192:0
      END ELSE                                                                                        39145400 T  0196:1
                                                                                                                    39145200
      FILLBUFFERS(FIB[16],FIB[19],COBOL,NBUFS);                                                       39146000 T  0196:1
      IF COBOL>0 THEN FIB[16]←(*P(DUP))&M[ALPHA][CTC];                                                39147000 T  0200:0
FINALIN:: FIB[6] ← FIB[7] ← FIB[17] ← 0; GO TO FIXFIB;                                                39148000 T  0204:0
LOOKOUT:: IF IO THEN OTHERFILEOPENIN(0) ELSE OTHERFILEOPENOUT(0);                                     39155000 T  0207:3
          IF U LSS 0 THEN GO TO EXIT ELSE GO TO FIND;                                                 39156000 T  0210:3
FINALOUT::  IF NOT FIB[18].[1:1] THEN GETBUFFERS(BLEN,NBUFS,U,ALPHA);%                                39230000 T  0212:2
FIND:       MAKEIODS;%                                                                                39231000 T  0216:1
            FIB[6]←FIB[7]←0;%                                                                         39232000 T  0217:0
            FIB[17]←IF COBOL THEN FIB[16].[3:15]ELSE FIB[18].[18:15];%                                39233000 T  0219:1
              IF KIND = 10 THEN                                                                       39233100 T  0223:2
              FOR T2 ← 0 STEP 1 UNTIL (NBUFS-1) DO                                                    39233200 T  0224:1
              P(@170000000000,M[ALPHA+T2],←);                                                         39233300 T  0229:0
              IF KIND=13 THEN                                                                         39233400 T  0233:0
                   M[ALPHA+1]← P(DUP.LOD)&P(DUP.LNG)[24:24:1];                                        39233500 T  0233:3
            GO TO FIXFIB;%                                                                            39234000 T  0237:3
DC0:      U:=30; KIND:=10;                                                                            39235000 T  0238:1
 $ SET OMIT = NOT(DATACOM AND RJE )                                                                   39235099 T  0239:3
          GO TO SPDC;                                                                                 39235200 T  0239:3
DC19:                                                                                                 39236000 T  0240:1
          OTHERFILEOPENIN(2);                                                                         39236100 T  0240:1
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                                                 39236154 T  0241:0
          GO SPDC;                                                                                    39236160 T  0241:0
SPO::     MODE← 0;  U← 25;     KIND← 5;                                                               39236900 T  0241:2
SPDC: CNTCTL←DIREC←0; UNLABELED←1;                                                                    39237000 T  0244:1
      STARTIMING(FNUM,U);%                                                                            39238000 T  0246:1
      GO TO FINALOUT;%                                                                                39239000 T  0247:1
SPN:: U←25; KIND←5;                                                                                   39240000 T  0247:3
```

```
      MODE←CNTCTL←DIREC←0; UNLABELED←1;%                                  39241000 T  0249:2
      STARTIMING(FNUM,U);%                                               39242000 T  0252:0
      IF BLEN<10 THEN BLEN←10;%                                          39243000 T  0253:0
      GETBUFFERS(BLEN,NBUFS,U,ALPHA);%                                   39244000 T  0255:0
      MAKEIODS;%                                                         39245000 T  0256:2
      GO TO FINALIN;%                                                    39246000 T  0258:0
DKRN:: DKR0: ACCESS:=1;                                                  39247000 T  0258:2
             GO TO DK1;                                                  39248000 T  0259:3
DKU0::       IO:=1;                                                      39249000 T  0260:1
DKUN::       ACCESS:=2;                                                  39250000 T  0261:3
             GO TO DK1;                                                  39251000 T  0262:3
DKPN:: DKP0:                                                             39252000 T  0263:1
 $ SET OMIT = NOT SHAREDISK                                              39252999 T  0264:0
 $ SET OMIT = SHAREDISK                                                  39254999 T  0264:0
             GO TO DCN;                                                  39255000 T  0264:0
 $ POP OMIT                                                              39255001 T  0264:2
DKSN:: DKS0: ACCESS←0;                                                   39256000 T  0264:2
DK1:         DISKFILEOPEN(0);                                            39257000 T  0265:3
             IF TOG THEN GO TO EXIT;                                     39258000 T  0266:2
             GO TO FIXFIB;                                               39259000 T  0267:2
 DCIN::  U←30; KIND←10;                                                  39293100 T  0268:0
         CNTCTL←DIREC←0; UNLABELED←1;                                    39293200 T  0269:2
         STARTIMING(FNUM,U);                                             39293300 T  0271:2
         GETBUFFERS(BLEN,NBUFS,U,ALPHA);                                 39293400 T  0272:2
         IOMASK:=0; MAKEIODS;                                            39293500 T  0274:0
FIXFIB::    FIB[4].[2:1]←UNLABELED;%                                     39294000 T  0276:0
            FIB[4].[8:4]←KIND;%                                          39295000 T  0278:2
            FIB[15].[24:6]←U;                                            39296000 T  0281:0
            FIB[13].[28:10]←REEL;%                                       39297000 T  0283:2
            FPB←PRT[PIMIX,3];                                            39297010 T  0286:0
            FPB[FNUM+3].[43:5]←TYPE;                                     39297020 T  0287:2
            STREAM(REEL,D:=[FPB[FNUM+2]]);                               39297100 T  0290:2
            BEGIN DI:=D;SI:=LOC REEL;DS:=3DEC END;                       39297200 T  0292:1
                                                                                        39297200
            RDCTABLE[U].[8:6]←PIMIX;%                                    39298000 T  0293:1
            IF FIB[18].[1:1] THEN%                                       39299000 T  0295:3
            BEGIN FIB[16]←0;%                                            39300000 T  0296:3
                  FIB[5]←STATE&8[39:42:6];%                              39301000 T  0298:2
                   FIB[10].[3:15]←0;                                     39301100 T  0300:3
            END ELSE%                                                    39302000 T  0303:1
                                                                                        39300000
           FIB[5].[CF]←STATE&DIREC[44:47:1]&IO[39:43:5]&FIB[5][45:45:1];  39303000 T  0303:1
            IF COBOL>0 OR FIB[4].[7:1] THEN M[FIB INX NOT 1].[3:6] ← 6    39304000 T  0307:2
                       ELSE M[ALPHA-7].[3:6]←4;%                         39305000 T  0313:1
            FIB[4].[27:3]←ACCESS;%                                       39306000 T  0319:0
            IF U<16 THEN IF KIND≠7 THEN FPB[FNUM+3].[23:1]:=IO;          39306010 T  0321:2
            IF (U←T1←FIB[10].[3:15])≠0 THEN                              39306100 T  0327:0
            DO BEGIN IF KIND=10 THEN M[U-1]←0;  %FAKE QUEUE              39306200 T  0329:2
            M[U-2].[3:6]←3 END UNTIL (U←M[U].[FF]-2)=T1;                 39306300 T  0331:1
                                                                                        39306200
EXIT::%                                                                  39307000 T  0340:0
      IF XTRA THEN                                                       39307100 T  0340:0
         XTRAC:=NOT(FIB[4].[7:1] OR UNLABELED) AND XTRAC NEQ 2;          39307200 T  0340:1
      IF XTRA LSS 2 THEN GO TO INITIATE;                                 39307300 T  0344:0
      ROW:=XTRAR;                                                        39307400 T  0345:3
END FILEOPEN;%                                                           39308000 T  0346:2
                                                                                        39001000
```

SIZE= 0347 WORDS

```
                    PROCEDURE SUSTATUS(A,DDD,B); VALUE A,DDD,B; REAL A,B; ARRAY DDD[*];          39900000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 00973
                        BEGIN REAL RT1,I;                                                        39901000 T  0000:0
STACK(F+1) = RT1
STACK(F+2) = I
                        ARRAY D[*],ZSF[*],VADAR[*];                                              39902000 T  0000:0

STACK(F+3) = D
STACK(F+4) = ZSF
STACK(F+5) = VADAR
                        SUBROUTINE SPOUT(ITNOW);                                                 39903000 T  0000:0
                        BEGIN                                                                    39904000 T  0001:0
                             STREAM(X:=[TINU[B]], D, EUNUM:=0, SU:=0, I, RT1);                   39905000 T  0001:0
                             BEGIN SI:=X; SI:=SI+5;                                              39906000 T  0003:2
                                  DS:="LIT" "; DS:=3 CHR; SI:=D;                                 39907000 T  0004:0
                                  10(IF SC≠"0" THEN                                              39908000 T  0005:0
                                     BEGIN X:=SI; EUNUM:=TALLY;                                  39909000 T  0005:3
                                          SI:=LOC EUNUM; DS:= 3 LIT" EU"; DS:=DEC;               39910000 T  0006:1
                                          DS:=4 LIT" SU "; TALLY:=0;                             39911000 T  0007:2
                                          5(SU:=TALLY; SI:=X; SKIP SB; SKIP SU SB;               39912000 T  0008:2
                                            IF SB THEN                                           39913000 T  0010:0
                                            BEGIN SI:=LOC SU;                                    39914000 T  0010:2
                                                 DS:=DEC; DS:="LIT",";                           39915000 T  0010:3
                                            END;                                                 39916000 T  0011:2
                                                                                                             39914000
                                            TALLY:=TALLY+1);                                     39917000 T  0011:2
                                          SI:=X; TALLY:=EUNUM;                                   39918000 T  0012:0
                                     END;                                                        39919000 T  0013:0
                                                                                                             39909000
                                     TALLY:=TALLY+1; SI:=SI+1);                                  39920000 T  0013:0
                                  SI:=LOC I; SI:=SI+7; DI:=DI-1;                                 39921000 T  0013:3
                                  IF SC≠"0" THEN                                                 39922000 T  0014:2
                                  BEGIN DS:=5 LIT" WENT";                                        39923000 T  0015:0
                                       IF SC="2" THEN DS:=4 LIT" NOT";                           39924000 T  0016:0
                                  END ELSE DS:=4 LIT" ARE";                                      39925000 T  0017:1
                                                                                                             39923000
                                  DS:=8 LIT" READY.←";                                           39926000 T  0018:1
                             END;                                                                39927000 T  0019:2
                                                                                                             39906000
                             SPOUT(RT1);                                                         39928000 T  0019:3
                        END OF SPOUT(ITNOW;                                                      39929000 T  0021:0
                                                                                                             39904000
                                                                                                 39929100 T  0021:1
                        SUBROUTINE DOIT;                                                         39930000 T  0021:1
                        BEGIN                                                                    39931000 T  0022:0
                             IF NOT (ZSF[0] OR ZSF[1].[1:11]) ≠ NOT 0 THEN                       39932000 T  0022:0
                             BEGIN B:=18; D:=ZSF;                                                39933000 T  0024:3
                                  RT1:=SPACE(20);                                                39934000 T  0027:0
                                  SPOUTITNOW;                                                    39935000 T  0029:1
                             END;                                                                39936000 T  0030:0
                                                                                                             39933000
                             IF NOT (ZSF[2] OR ZSF[3].[1:11]) ≠ NOT 0 THEN                       39937000 T  0030:0
                             BEGIN B:=19; D:=[ZSF[2]];                                           39938000 T  0032:3
                                  RT1:=SPACE(20);                                                39939000 T  0035:0
                                  SPOUTITNOW;                                                    39940000 T  0037:1
                             END;                                                                39941000 T  0038:0
                                                                                                             39938000
                        END OF DOIT;                                                             39942000 T  0038:0
```

```
                                                                                          39931000
%                                                                   39942900 T  0038:1
%       START OF CODE                                               39942910 T  0038:1
%                                                                   39942920 T  0038:1
        IF B≠0 THEN                                                 39943000 T  0038:1
        BEGIN D:=[MULTITABLE[16]]&2[8:38:10];                       39944000 T  0041:0
             RT1:=A;                                                39945000 T  0043:2
 $ SET OMIT = DEX                                                   39945999 T  0044:1
             IF B THEN D:=2 ↑NX D;                                  39946000 T  0044:1
 $ POP OMIT                                                         39946001 T  0046:2
             IF NOT (IF B THEN P(RRR).[28:1] ELSE P(RRR).[29:1])    39947000 T  0046:2
 $ SET OMIT = DEX                                                   39947999 T  0049:1
                OR NOT (D[0] OR D[1].[1:11]) = NOT 0                39948000 T  0049:1
 $ POP OMIT                                                         39948001 T  0051:2
             THEN                                                   39949000 T  0051:2
             BEGIN STREAM(X:=[T[NU[B]], RT1);                       39950000 T  0052:2
                  BEGIN SI:=X; SI:=SI+5;                            39951000 T  0054:1
                       DS:=LIT" "; DS:=3 CHR;                       39952000 T  0054:3
                       DS:=11 LIT" NOT READY←";                     39953000 T  0055:2
                  END;                                              39954000 T  0057:1
                                                                                          39951000
                  SPOUT(RT1);                                       39955000 T  0057:2
             END ELSE SPOUTITNOW;                                   39956000 T  0058:3
                                                                                          39950000
        END ELSE                                                    39957000 T  0060:0
                                                                                          39944000
        BEGIN ZSF:=[M[SPACE(4)]]&4[8:38:10];                        39958000 T  0060:0
             VADAR:=[MULTITABLE[16]]&4[8:38:10];                    39959000 T  0064:1
             DISKWAIT(-A,-30,DIRECTORYTOP);                         39960000 T  0066:1
             FOR I:=0 STEP 1 UNTIL 3 DO                             39961000 T  0068:0
                  ZSF[I]:=VADAR[I] AND NOT DDD[23+I];               39962000 T  0069:0
             I:=1; DOIT;                                            39963000 T  0074:1
             FOR I:=0 STEP 1 UNTIL 3 DO                             39964000 T  0076:0
             BEGIN ZSF[I]:=NOT VADAR[I] AND DDD[23+I];              39965000 T  0077:0
                  DDD[23+I]:=VADAR[I];                              39966000 T  0080:0
             END;                                                   39967000 T  0082:0
                                                                                          39965000
             DISKWAIT(A,-30,DIRECTORYTOP);                          39968000 T  0084:1
             I:=2; DOIT;                                            39969000 T  0085:3
             FORGETSPACE(ZSF);                                      39970000 T  0088:0
        END;                                                        39971000 T  0089:0
                                                                                          39958000
    END;                                                            39972000 T  0089:0
                                                                                          39901000
                                                                                SIZE= 0090 WORDS
```

```
                    PROCEDURE DIRECTORYBUILDER(A,DDD);                                                  40000000 T  000010
PRT(703) = DIRECTORYBUILDER                                                                  START OF REL SEGMENT; DISK ADDRESS = 00976
                            VALUE A,DDD;                                                                40001000 T  000010
                            REAL A;                                                                     40002000 T  000010
                            ARRAY DDD[*];                                                               40003000 T  000010
                    BEGIN REAL Y,Z,B,C,I,J,T,RA,RL,RT1,R;INTEGER RADD,RLEN;                             40004000 T  000010
STACK(F+1) = Y
STACK(F+2) = Z
STACK(F+3) = B
STACK(F+4) = C
STACK(F+5) = I
STACK(F+6) = J
STACK(F+7) = T
STACK(F+10) = RA
STACK(F+11) = RL
STACK(F+12) = RT1
STACK(F+13) = R
STACK(F+14) = RADD
STACK(F+15) = RLEN
                      REAL  NEXTLINK, AD, X, K, SEVEN7, FORTY, EUSU;                    %791-       40004500 P  000010
STACK(F+16) = NEXTLINK
STACK(F+17) = AD
STACK(F+20) = X
STACK(F+21) = K
STACK(F+22) = SEVEN7
STACK(F+23) = FORTY
STACK(F+24) = EUSU
                      ARRAY SU[*];                                                                      40005000 T  000010
STACK(F+25) = SU
                      ARRAY HEAD[*],KK[*],PL[*];                                                        40005050 T  000010
STACK(F+26) = HEAD
STACK(F+27) = KK
STACK(F+30) = PL
                      REAL W,ESPADD,DISKTOP,SUPER,EUM,NT1,NT2,NT3,NT4;                                  40005100 T  000010
STACK(F+31) = W
STACK(F+32) = ESPADD
STACK(F+33) = DISKTOP
STACK(F+34) = SUPER
STACK(F+35) = EUM
STACK(F+36) = NT1
STACK(F+37) = NT2
STACK(F+40) = NT3
STACK(F+41) = NT4
                      BOOLEAN UCHANG,ERROR;INTEGER LO,REM,TN,TM,MN;REAL X1,X2,EUMASK;                   40005110 T  000010
STACK(F+42) = UCHANG
STACK(F+43) = ERROR
STACK(F+44) = LO
STACK(F+45) = REM
STACK(F+46) = TN
STACK(F+47) = TM
STACK(F+50) = MN
STACK(F+51) = X1
STACK(F+52) = X2
STACK(F+53) = EUMASK
                      ARRAY ZSF[*],SOCK[*];                                                             40005200 T  000010
STACK(F+54) = ZSF
```

```
STACK(F+55) = SOCK
           REAL D,Y1,Y2;                                                                   40005210 T  000:0
STACK(F+56) = D
STACK(F+57) = Y1
STACK(F+60) = Y2
           REAL AA,AAA;                                                                    40005220 T  000:0
STACK(F+61) = AA
STACK(F+62) = AAA
           LABEL FORGET;                                                                   40005230 T  000:0
                    ARRAY V[*,*];                                                          40006000 T  000:0
STACK(F+63) = V
                    INTEGER S;                                                             40006100 T  000:0
STACK(F+64) = S
                    ARRAY VR=V[*];                                                         40007000 T  000:0
STACK(F+63) = VR
                    REAL H,FI,FJ;                                                          40007500 T  000:0
STACK(F+65) = H
STACK(F+66) = FI
STACK(F+67) = FJ
            $ SET OMIT = NOT SHAREDISK                                                     40007990 T  000:0
                    LABEL LOOKATDKB,BACK,EXIT,M1,SKBLK,BYE;                                40008050 T  000:0
           DEFINE ROW=SU[X].[3:4]#,                                            %MC         40008100 T  000:0
                 LASTAVAIL=HEAD[0].[3:15]#,                                                40008110 T  000:0
              AVAILABLE=HEAD[0].[FF]#,                                                     40008120 T  000:0
                 FIRSTLINK=HEAD[0].[CF]#,                                                  40008130 T  000:0
                 DA=9:24#,DAC=9:24:24#,                                        %MC         40008140 T  000:0
              SIZE=PL[1].[DA]#,                                                            40008150 T  000:0
              ADDRESS=PL[0].[DA]#,                                                         40008160 T  000:0
                 HIGHLINK=PL[0].[CF]#,                                                     40008170 T  000:0
                 LOWLINK=PL[1].[CF]#,                                                      40008180 T  000:0
                 DISKRUNNING=[18:1]#,                                          %MC         40008190 T  000:0
                 FORTYMILLDISK=[19:1]#,                                        %MC         40008200 T  000:0
                 OCCUPIED=[20:1]#,                                             %MC         40008210 T  000:0
                  AV1=480#,AVBLOCK=16#;                                                    40008220 T  000:0
           SUBROUTINE SAVIT;                                                   %MC         40008300 T  000:0
           BEGIN                                                               %MC         40008310 T  001:0
           IF (W+W+2)≥28 THEN                                                  %MC         40008320 T  001:0
           BEGIN ZSF[29]+ESPADD;DISKWAIT(ZSF INX 0,30,ESPADD+GETESPDISK);      %MC         40008330 T  002:3
           W+0 END;ZSF[W]+T;ZSF[W+1]+DDD[479-2xI];                             %MC         40008340 T  007:1
                                                                                                   40008330
           END SAVIT;                                                          %MC         40008350 T  012:1
                                                                                                   40008310
            SUBROUTINE CLEAR;                                                              40009000 T  012:2
                 BEGIN V[S,0]+0;                                                           40010000 T  013:0
                       V[S,1] + BYPASS.[CF];                                               40011000 T  014:3
                       V[S,2]+@14;                                                         40012000 T  017:0
                       V[S,3]+V[S,4]+0;                                                    40013000 T  018:3
                       MOVE(57,[V[S,2]],[V[S,5]]);                                         40014000 T  022:0
                 END;                                                                      40015000 T  025:0
                                                                                                   40010000
           SUBROUTINE SETUP;                                                   %MC         40016000 T  025:1
           BEGIN                                                                           40016020 T  026:0
           LO:=(X+1) MOD 5;LO:=LO+(LO=0)x5;                                                40016025 T  026:0
           IF RADD NEQ (LO:=LOxFORTY) OR (LO=RADD AND RLEN LSS FORTY) THEN                 40016026 T  030:0
           BEGIN                                                               %MC         40016100 T  033:3
           IF Y:=(SU[X].[CF]=0) THEN                                                       40016200 T  034:1
               BEGIN                                                           %MC         40016220 T  036:1
```

```
      NT1:=SU[X]:=SPACE(16)&SU[X][18:18:9];                                  40016240 T  003:3
      MOVE(16,NT1-1,NT1);                                                    40016260 T  004:1
    END;                                                              %MC     40016300 T  004:1
                                                                              40016220
M[SU[X] INX K]←RT1←SPACE(64+Y);                                              40016400 T  004:1
KK←[M[RT1]]&(64+Y)[8:38:10];JUNK←61+Y;                                       40016410 T  004:0
MOVE(64+Y,RT1-1,RT1);                                                        40016420 T  005:0
FOR R:=3×Y STEP 2 UNTIL JUNK DO KK[R]:=RT1+R+2;                               40016500 T  005:2
HEAD←[M[M[SU[X]]]]&1[8:38:10];                                    %MC        40016510 T  006:2
IF Y THEN                                                         %MC        40016600 T  006:3
BEGIN                                                                        40016700 T  006:0
    KK[1]:=KK[2]:=SEVEN7;                                                    40016800 T  006:2
    KK[1].[DA]:=LO;                                                          40016900 T  006:3
    KK[2].[DA]:=IF X EQL 0 THEN FORTY-(DISKBOTTOM+5) ELSE FORTY;             40016910 T  007:1
    M[SU[X]].[DA]:=LO;                                                       40016920 T  007:3
      HEAD[0]:=RT1+1;                                                        40017050 T  007:3
END;                                                                         40017100 T  008:2
                                                                              40016700
HEAD[0].[FF]←RT1+3×Y;                                             %MC        40017200 T  008:2
HEAD[0].[3:15]←62+RT1+Y;                                          %MC        40017250 T  008:2
END                                                                          40017260 T  008:0
                                                                              40016100
     ELSE                                                                    40017270 T  008:0
DO                                                                           40017275 T  008:0
BEGIN SU[X].OCCUPIED:=1;                                                     40017280 T  008:2
    RADD:=RADD-FORTY;                                                        40017285 T  009:0
    X:=X-1;                                                                  40017290 T  009:1
END UNTIL (RLEN:=RLEN-FORTY) LSS FORTY;                                      40017295 T  009:2
                                                                              40017280
END OF SETUP;                                                     %MC        40017300 T  009:3
                                                                              40016020
SUBROUTINE BUILDAVAIL;                                            %MC        40027100 T  009:0
BEGIN                                                             %MC        40027200 T  009:0
BACK:=ERROR←1;REM←0;                                              %MC        40027230 T  009:0
IF (Z:=SU[X])≠0 AND Z.[CF]=0 THEN                                            40027240 T  009:2
    BEGIN K:=0; SETUP; GO BACK END;                                          40027245 T  009:2
                                                                              40027245
IF (Z:=SU[X]).DISKRUNNING AND NOT Z.OCCUPIED AND RLEN>0 THEN                 40027250 T  010:2
    BEGIN                                                         %MC        40027260 T  010:1
      IF M[SU[X]].[DA] GEQ RADD THEN                                         40027270 T  010:3
      BEGIN                                                                  40027280 T  010:0
      P(M,M[SU[X]]],0&RADD[9:24:24],LLL,0,INX,,AD,←,DEL);             %MC        40027290 T  010:2
      HEAD←[M[M[SU[X]]]]&1[8:38:10];PL←[M[AD]]&2[8:38:10];             %MC        40027295 T  011:1
           IF ((RA:=ADDRESS)-(RL:=SIZE) LSS RADD-RLEN OR                       40039000 T  011:3
            (REM:=IF(NT1:=RADD MOD FORTY)=0 THEN 0 ELSE NT1-RLEN) LSS          40039100 T  012:0
            0)AND RADD NEQ RA THEN                                             40039200 T  012:1
          BEGIN                                                        %MC     40040000 T  013:0
            IF REM LSS 0 THEN RLEN:=RADD MOD FORTY;                            40040500 T  013:2
            IF AVAILABLE=0 THEN%NEED ANOTHER ROW                       %MC     40041000 T  013:0
              BEGIN                                                    %MC     40042000 T  013:2
                K←ROW;K←K+1;ROW←K;                                     %MC     40042100 T  013:0
                IF K GTR 15 THEN DO UNTIL FALSE;                       %MC     40043000 T  014:1
                     SETUP;                                            %MC     40044000 T  014:1
              END;                                                     %MC     40045000 T  014:0
                                                                              40042000
            NEXTLINK←M[R←AVAILABLE];                                   %MC     40046000 T  014:0
            M[R]←AD&(RADD-RLEN)[DAC];                                  %MC     40047000 T  014:3
```

```
    IF AD.[CF]=SEVEN7 THEN M[SU[X]].[DA]←RADD-RLEN;          %MC      40047100 T  0148:3
  IF LOWLINK=SEVEN7 THEN                                              40048000 T  0154:0
     FIRSTLINK:=R                                                     40049000 T  0155:2
          ELSE                                                        40050000 T  0157:0
     M[LOWLINK].[CF]:=R;                                              40051000 T  0158:0
 M[R+1]:=PL[1]&(RADD-RLEN-(RA-RL))[DAC];                              40055000 T  0161:2
  PL[1]:=R&(RA-RADD)[DAC];                                            40056000 T  0166:1
    RLEN←0;                                                %MC      40056100 T  0169:0
    AVAILABLE←NEXTLINK;ERROR←FALSE;                        %MC      40057000 T  0169:3
  END                                                      %MC      40058000 T  0172:2
                                                                                40040000
    ELSE%REDUCE EXISTING AREA(BEWARE OF ADDRESS CONFLICT OR%MC      40059000 T  0172:2
        %FU UNDERFLOW).                                    %MC      40060000 T  0172:2
BEGIN                                                      %MC      40060050 T  0172:2
    IF (RA-RL) GEQ RADD THEN RLEN := 0 ELSE                %604-    40060060 C  0173:0
    IF RADD=RA AND RL GEQ RLEN THEN                                 40060100 T  0175:2
    BEGIN                                                  %MC      40060200 T  0177:3
       ADDRESS←RA-RLEN;                                    %MC      40060300 T  0178:1
       IF HIGHLINK=SEVEN7 THEN                             %MC      40060302 T  0181:1
       M[SU[X]].[DA]←ADDRESS;                              %MC      40060305 T  0182:3
       SIZE←RL-RLEN;ERROR←RLEN←0;                          %MC      40060400 T  0187:0
    END                                                    %MC      40060500 T  0191:1
                                                                                40060200
    ELSE                                                   %MC      40060600 T  0191:1
  IF RLEN>RL THEN                                          %MC      40061000 T  0191:1
   IF LOWLINK=SEVEN7 AND(X-1)MOD 5≠4 THEN                  %MC      40062000 T  0192:2
      BEGIN                                                %MC      40063000 T  0196:2
         RADD←RADD-RL-1;RLEN←RLEN-RL-1;SIZE←0;ERROR←0;     %MC      40064000 T  0197:0
      END                                                  %MC      40065000 T  0203:3
                                                                                40063000
      ELSE                                                         40065010 T  0203:3
    IF RADD-RLEN LSS (NT1:=M[LOWLINK].[DA]) THEN                   40065020 T  0203:3
        BEGIN                                                      40065030 T  0208:0
        RLEN:=RLEN-(RADD-(RADD:=NT1));                             40065040 T  0208:2
        SUPER:=1;GO BACK;                                          40065050 T  0210:3
        END                                                        40065060 T  0212:0
                                                                                40065030
             ELSE                                                  40065070 T  0212:0
    IF RADD GTR RA-RL THEN                                         40065080 T  0212:0
        BEGIN                                                      40065090 T  0213:3
        RLEN:=RADD-(RA-RL);SUPER:=1;                               40065100 T  0214:1
        GO BACK;                                                   40065110 T  0216:3
        END                                                        40065120 T  0217:1
                                                                                40065090
      ELSE  RLEN← 0                                        %MC      40066000 T  0217:1
   ELSE                                                    %MC      40067000 T  0218:0
  BEGIN SIZE←RL-RLEN;ERROR←RLEN←0; END;                    %MC      40068000 T  0218:2
                                                                                40068000
END;                                                       %MC      40068050 T  0223:1
                                                                                40060050
  IF SIZE=0 THEN                                           %MC      40068100 T  0223:1
    BEGIN                                                  %MC      40069000 T  0224:3
      IF HIGHLINK=SEVEN7 AND LOWLINK=SEVEN7 THEN           %MC      40070000 T  0225:1
       BEGIN                                               %MC      40071000 T  0228:2
       SU[X].OCCUPIED←TRUE;                                %MC      40072000 T  0229:0
          K←-1;                                            %MC      40073000 T  0231:2
       WHILE(Y←M[SU[X]INX (K←K+1)])≠0 AND K≤15 DO          %MC      40074000 T  0232:2
```

```
          FORGETSPACE(Y);                                          %MC      40075000 T  0237:3
        FORGETSPACE(SU[X]);                                        %MC      40076000 T  0239:0
    END                                                            %MC      40077000 T  0240:0
                                                                                       40071000
   ELSE                                                            %MC      40078015 T  0240:0
    BEGIN                                                          %MC      40078020 T  0240:0
        IF HIGHLINK=SEVEN7 THEN                                    %MC      40078030 T  0240:2
          BEGIN                                                    %MC      40078031 T  0242:0
          M[PL[1]].[CF]←SEVEN7;                                    %MC      40078032 T  0242:2
          M[SU[X]].[DA]←M[PL[1]].[DA];                             %MC      40078033 T  0245:0
          END                                                      %MC      40078034 T  0249:2
                                                                                       40078031
              ELSE                                                 %MC      40078035 T  0249:2
          BEGIN                                                    %MC      40078036 T  0249:2
    M[PL[0]+1].[CF]:=LOWLINK;                                                  40078038 T  0250:0
          IF LOWLINK=SEVEN7 THEN                                   %MC      40078040 T  0253:3
             FIRSTLINK←HIGHLINK                                    %MC      40078042 T  0255:1
                 ELSE                                              %MC      40078046 T  0257:0
       M[PL[1]].[CF]:=HIGHLINK;                                                40078048 T  0258:2
          END;                                                     %MC      40078050 T  0262:1
                                                                                       40078036
       IF M[LASTAVAIL]=0 THEN                                      %MC      40078052 T  0262:1
                M[LASTAVAIL]←AD;LASTAVAIL←AD;                      %MC      40078054 T  0264:2
       IF AVAILABLE=0 THEN AVAILABLE←AD;                           %MC      40078058 T  0269:3
PL[0]:=0;                                                                      40078060 T  0273:3
   END;                                                            %MC      40078065 T  0275:0
                                                                                       40078020
         END;                                                      %MC      40078067 T  0275:0
                                                                                       40069000
IF REM LSS 0 THEN BEGIN RADD←X MOD 5;RADD←(RADD+(RADD=0))×FORTY;                   40078068 T  0275:0
    RLEN←ABS(REM); END;                                                        40078069 T  0279:3
                                                                                       40078068
          X←X-(RLEN≠0);                                            %MC      40078070 T  0280:3
         END ELSE                                                                40078072 T  0282:2
                                                                                       40027280
         IF(NT1:=M[SU[X]].[DA]) GTR RADD-RLEN THEN                                 40078074 T  0282:2
            BEGIN RLEN:=RLEN-(RADD-(RADD:=NT1));                                   40078076 T  0286:1
            SUPER:=1; GO BACK;                                                     40078078 T  0289:0
          END                                                      %MC      40078080 T  0290:1
                                                                                       40078076
          ELSE                                                                 40078085 T  0290:1
            RLEN←0;                                                %MC      40078087 T  0290:1
        END;                                                       %MC      40078090 T  0291:2
                                                                                       40027260
    IF RLEN>0 AND NOT ERROR THEN GO BACK;                          %MC      40078091 T  0291:2
SUPER:=SUPER OR (ERROR AND SU[X].DISKRUNNING);                                 40078092 T  0293:3
END OF COMPLEMENTING DISK DIRECTORY;                                           40078093 T  0296:1
                                                                                       40027200
SUBROUTINE LOCKED;                                                             40100000 T  0296:2
BEGIN                                                                          40100100 T  0297:0
IF (X1:=(RADD-RLEN) DIV TN)=(X2:=RADD DIV TN) THEN                             40100200 T  0297:0
IF(TWO(X1) AND EUM)=0 THEN BUILDAVAIL ELSE GO FORGET ELSE                      40100300 T  0300:1
BEGIN                                                                          40100400 T  0304:0
    Y1:=RADD;Y2:=RLEN;                                                         40100500 T  0304:2
    IF(RLEN:=(X1+1)×TN-(RADD-Y2  )  )GTR 0 AND (TWO(X1) AND EUM)=0 THEN        40100600 T  0306:0
        BEGIN RADD:=(X1+1)×TN;X:=5×D+((Y1-Y2)DIV FORTY);BUILDAVAIL END;        40100700 T  0311:1
                                                                                       40100700
```

```
    IF (RLEN:=  Y1-(X2×TN)) GTR 0 AND (TWO(X2) AND EUM) EQL 0 THEN                  40100800 T  0317:0
        BEGIN RADD:=Y1;X:=5×D+RADD DIV FORTY;BUILDAVAIL; END;                       40100900 T  0321:1
                                                                                                40100900
    WHILE (X2:=X2-1) GTR X1 DO                                                      40101100 T  0326:0
        BEGIN                                                                       40101200 T  0328:1
        RLEN:=TN;X:=5×D+((RADD:=(X2+1)×TN)-1)DIV FORTY;                             40101250 T  0328:1
        IF (TWO(X2) AND EUM)=0 THEN BUILDAVAIL;                                     40101300 T  0333:1
        END;                                                                        40101400 T  0337:0
                                                                                                40101200
END;                                                                                40101500 T  0337:2
                                                                                                40100400
FORGET:                                                                             40101510 T  0337:2
END OF LOCKED;                                                                      40101600 T  0337:2
                                                                                                40100100
%                                                                                   40199900 T  0337:3
 $ SET OMIT = NOT SHAREDISK                                                         40199990 T  0337:3
SU←[M[RT1←SPACE(100)]]&100[8:38:10];                                                40249100 T  0337:3
SEVEN7:=@77777;FORTY:=40000;TN:=10000;MN:=1000000;TM:=10000000;                     40249105 T  0356:0
MOVE(100,RT1-1,RT1);                                                                40249110 T  0359:3
SOCK:=[M[RT1:=SPACE(40)]]&40[8:38:10];                                              40249120 T  0361:3
MOVE(40,RT1-1,RT1);                                                                 40249130 T  0366:0
X1:=NEUP.[3:15]-1;% CHECK ONLY UNITS THAT EXIST                                     40249200 T  0368:0
VR:=[MULTITABLE[16]]&4[8:38:10];                                                    40249250 T  0369:3
LOOKATDKB:                                                                  %MC     40249300 T  0371:3
FOR J:=0 STEP 1 UNTIL X1 DO                                                         40250000 T  0371:3
BEGIN                                                                               40251000 T  0378:0
X2:=19;                                                                             40252000 T  0378:0
FOR I:=0STEP 1 UNTIL X2 DO                                                          40253000 T  0378:3
BEGIN                                                                               40254000 T  0380:0
    RADD:=MN×J+I×TN;                                                                40254100 T  0380:0
    STREAM(Q:=RADD,B:=40+A);                                                        40255000 T  0382:1
    BEGIN S:=LOC Q;DS:=8 DEC END;                                                   40256000 T  0383:3
                                                                                                40256000
OKSEGZEROWRITE:= TRUE;                                                      %204-   40256010 C  0384:2
    IF I EQL 0 THEN                                                                 40257000 T  0385:1
        BEGIN X2:=20×WAITIO(40+A INX@140000000,@64,18+C),[43:1]+X2;                 40257030 T  0386:0
            IF X2=39 THEN VR[NT1:=1+C×2]:=P(DUP,LOD) OR TWO(11-J);                  40257060 T  0391:1
        END;                                                                        40257100 T  0397:0
                                                                                                40257030
    IF NOT(R←WAITIO(40+A INX @100000000,@64,18+C)),[42:1] THEN                      40258000 T  0397:0
    BEGIN                                                                           40261000 T  0401:0
    NT2:=(NT1:=5×J+50×C)+(I DIV(SU[NT1].FORTYMILLDISK+1)DIV 4);                     40261010 T  0401:2
    SU[NT2]:=P(DUP,LOD)&1[18:47:1]&(X2>19)[19:47:1];                                40261040 T  0407:0
    IF R.[43:1] THEN                                                                40261042 T  0411:0
    BEGIN FORTY:=FORTY×((X2 GTR 19)+1);                                             40261043 T  0411:3
    SOCK[C×10+J]:=(*P(DUP)) OR TWO(I);                                              40261044 T  0414:2
    X:=NT2;RADD:=(RADD MOD MN)+(RLEN:=TN);BUILDAVAIL;                               40261046 T  0418:0
    FORTY:=40000;                                                                   40261047 T  0422:0
    END ELSE SOCK[C×10+J+20]:=(*P(DUP)) OR TWO(IF X2=19 THEN I ELSE                 40261048 T  0422:3
                                                                                                40261043
                            (I DIV 8)×4 + (I AND 3));                               40261049 T  0431:3
    END ELSE %NOT READY CHECK NEXT SU                                               40261050 T  0435:0
                                                                                                40261000
     BEGIN EUSU:=EUSU OR TWO(4*(IF X2=19 THEN I ELSE (I DIV 8)×4+(I AND             40261100 T  0435:0
                            3))DIV 4);                                              40261150 T  0439:3
          I:=I+(((SU[NT1:=(5×J+50×C)].FORTYMILLDISK+1)×4)-1);                       40261200 T  0442:1
OKSEGZEROWRITE:= FALSE;                                                     %204-   40261210 C  0447:3
```

```
END END;                                                                                    40261250 T  0448:2
                                                                                                    40261100
                                                                                                    40254000
    STRFAM(A:=(NOT EUSU).[43:5], J, D:=VR INX C INX C);                                     40261300 T  0450:3
    BEGIN SI:=LOC A; SI:=SI+7;                                                              40261350 T  0454:0
          DI:=DI+J; DS:=CHR;                                                                40261400 T  0454:2
    END;                                                                                    40261450 T  0455:1
                                                                                                    40261350
    EUSU:=0;                                                                                40261500 T  0455:2
END;                                                                                        40262000 T  0456:1
                                                                                                    40251000
 $ SET OMIT = NOT(DKBNODFX AND NOT DFX)                                                     40262299 T  0458:2
 $ SET OMIT = NOT(DFX)                                                                      40262369 T  0458:2
              J←DIRMOD;                                                                     40262500 T  0458:2
              V ← FM[SPACE(J)]]& J [8:38:10];                                               40263000 T  0459:1
              J ← J-1;                                                                      40264000 T  0463:0
              FOR S ← 0 STEP 1 UNTIL J DO                                                   40264500 T  0464:1
                   BEGIN VR[S] ←  [M[GETSPACE(61,0,0)+1]]&62[8:38:10];                      40265000 T  0465:0
                       BYPASS←BYPASS-2;                                                     40266000 T  0469:1
                        CLEAR;                                                              40267000 T  0470:2
                   END;                                                                     40268000 T  0472:0
                                                                                                    40265000
              AAA:=AA:=SPACE(480);                                                          40275200 T  0474:1
              DISKWAIT(-A,480,J:=DIRECTORYTOP+4);                                           40275300 T  0477:0
              ZSF←FM[SPACE(31)]]&30[8:38:10];                                               40275500 T  0479:2
              ZSF[0]←@14;                                                                   40275600 T  0483:1
              W←0;                                                                          40275700 T  0484:2
              FOR J:=J STEP 16 WHILE J≠16 DO                                                40276000 T  0485:1
              BEGIN                                                                         40277000 T  0489:1
                        DISKIO(NT3,-(AAA-1),480,J+16);                                      40278000 T  0489:1
                        IF J+15 GEQ BYPASS.[CF] THEN                                        40278100 T  0492:0
BYE:                      BYBY("DIRECTORY FULL←",15);                                       40278150 T  0493:3
                                                                                                    40278150
                                                                                                    40278150
                        BYPASS.[FF]←J+15;                                                   40278200 T  0500:1
                        FOR I ← 0 STEP 1 UNTIL 14 DO%                                       40279000 T  0502:0
                             BEGIN T ← DDD[478-2×I];%                                       40280000 T  0503:0
                                  H:=J+14-I;                                                40280100 T  0505:0
                                  IF T=@114 THEN                                            40281000 T  0506:3
                                    BEGIN DDD[479-2×I]:=0;                                  40281100 T  0507:2
                                         UCHANG:=0;                        %R61             40281110 T  0510:1
                                         I:=15;                                             40281200 T  0511:0
                                    END ELSE                                                40281300 T  0511:3
                                                                                                    40281100
                                  IF T=@14 OR                                               40282000 T  0511:3
                                     DDD[424-I×30].[1:1] THEN                               40283100 T  0513:0
                                    BEGIN DDD[478-2×I]:=@14;                                40283200 T  0515:1
                                         UCHANG:=0;                        %R61             40283210 T  0518:0
                                         DDD[479-2×I]:=NEXTSLOT;                            40283300 T  0518:3
                                         IF NEXTSLOT=0 THEN                                 40283400 T  0521:0
                                         BEGIN FI:=I;FJ:=J+15 END;                          40283500 T  0521:3
                                                                                                    40283500
                                         NEXTSLOT:=H;                                       40283600 T  0524:1
                                    END ELSE                                                40284000 T  0525:0
                                                                                                    40283200
                                    BEGIN DDD[429-I×30].[1:42]:=0;                          40285000 T  0525:0
                                         B:=DDD[429-I×30];                                  40285005 T  0529:0
```

```
                                        IF (C←DDD[423-I×30])≥0 THEN          40285010 T  0531:0
                                        BEGIN DDD[423-I×30]←                 40285020 T  0533:2
                                             -C&C[2:8:10];                   40285030 T  0535:2
                                             UCHANG:=0;          %R61        40285035 T  0537:2
                                                    DDD[424-I×30]←0;         40285135 T  0538:1
                                        END                                  40285140 T  0540:0
                                                                                         40285020
                                             ELSE                            40285150 T  0540:2
                                        DDD[424-I×30]←P(DUP,LOD)             40285160 T  0540:2
                                      AND @0037000000007774;                 40285170 T  0543:0
                                        IF C.[2:10]=0 OR                     40285500 T  0544:0
                                           DDD[424-I×30].[44:1] THEN         40285600 T  0545:1
                                           SAVIT;                            40285700 T  0546:2
                          FOR C:=1 STEP 1 UNTIL B DO                         40286000 T  0549:0
                          BEGIN RADD:=DDD[429-I×30+C];                       40287000 T  0551:0
                          IF RADD GEQ DISKBOTTOM+5 THEN                      40290000 T  0553:2
                          BEGIN                                              40290100 T  0554:3
                          IF (RADD:=RADD+(RLEN:=DDD[428-I×30])) GTR TM THEN  40290200 T  0555:1
                          BEGIN RADD:=RADD MOD TM;X:=50 END ELSE X:=0;       40290300 T  0558:3
                                                                                         40290300
                          IF SU[X:=X+5×(D:=RADD DIV MN)].FORTYMILLDISK THEN  40290400 T  0562:2
                          FORTY:=P(FORTY,DUP,+);                             40290500 T  0566:0
                          X:=((RADD:=RADD MOD MN)-1) DIV FORTY + X;          40290600 T  0567:3
                          IF (EUM:=SOCK[D]) NEQ 0 THEN LOCKED ELSE BUILDAVAIL;  40292050 T  0571:0
                          FORTY:=40000;                                      40292060 T  0576:0
IF SUPER THEN                                                                40292200 T  0576:3
    BEGIN                                                          %MC       40292210 T  0577:0
    STREAM(A:=T,B:=DDD[479-2×I],T:=SUPER:=SPACE(10));                        40292212 T  0577:2
    BEGIN DS:=2LIT", "; S1:=LOC A; SI:=SI+1; DS:=7CHR; DS:=LIT"/";           40292214 T  0582:0
          SI:=SI+1; DS:=7CHR; DS:=19LIT" DISK ADDRESS ERROR";                40292216 T  0583:3
          DS:=LIT".";                                                        40292218 T  0587:0
    END;                                                                     40292220 T  0587:2
                                                                                         40292214
    SPOUT(SUPER);                                                            40292222 T  0587:3
    ERROR:=SUPER:=0;                                                         40292230 T  0589:0
    END;                                                           %MC       40292240 T  0590:1
                                                                                         40292210
                        END;                                               40292250 T  0590:1
                                                                                         40290100
                                                                   %MC       40292300 T  0590:1
                                                                                         40287000
                                        B:=DDD[479-2×I];                     40293010 T  0592:2
                                        S:=(S:=DISKBOTTOM                    40293020 T  0594:2
                                         -SCRAMBLE(T,B)),                    40293030 T  0594:2
                                         [36:11];                            40293040 T  0602:0
                                        C:=V[S,0];                           40293050 T  0603:0
                                        V[S,C+2]:=T; V[S,C+3]:=B;            40293060 T  0604:2
                                        V[S,C+4]:=H;                         40293070 T  0609:0
                                        IF (V[S,0]:=C+3)=60 THEN             40293080 T  0611:1
                                        BEGIN V[S,4].[FF]←BYPASS←            40293090 T  0614:0
                                             BYPASS-2;                       40293100 T  0616:0
                                             IF J+15≥BYPASS.[CF]THEN         40293101 T  0618:0
                                               GO BYE;                       40293102 T  0618:3
                                             DISKWAIT([V[S,2]].[CF],         40293110 T  0620:1
                                              60,V[S,1]);                    40293120 T  0622:0
                                             CLEAR;                          40293140 T  0623:2
                                        END;                                 40293150 T  0625:0
```

```
                                                                                                                    40293090
     PBCOUNT:= ((((("PBD     " EQV T) = NOT 0) OR                                                    40309100 T  0625:0
                  (("PUD     " EQV T) = NOT 0)) AND                                                  40309150 T  0626:2
                   (B.[CF] = 1)) + PBCOUNT;                                                        40309200 T  0628:1
               END;       END;%                                                                    40310000 T  0630:3
                                                                                                                    40285000
                                                                                                                    40280000
          SLEEP([NT3],NOT 0);                                                                      40311000 T  0633:0
          DDD:=DDD&P(DUP,AAA)[CTC];                                                                40311100 T  0634:3
          AAA:=P INX 0;  %SWAP DDD BUFFERS                                                         40311200 T  0636:2
          DISKWAIT(AAA,480,J);                                                                     40311300 T  0637:2
          IF I = 16 THEN%                                                                          40312000 T  0638:3
               BEGIN%                                                                              40313000 T  0639:2
                    J ← 0;%                                                                        40314000 T  0640:0
               END;%                                                                               40315000 T  0640:3
                                                                                                                    40313000
     END;%                                                                                         40317000 T  0640:3
                                                                                                                    40277000
FOR I:= 0 STEP 1 UNTIL DIRMOD-1 DO                                                                 40317200 T  0645:0
     BEGIN DISKIO(T,[V[I,1]],[CF],60,V[I,1]);                                                      40317210 T  0649:1
          SLEEP([T],IOMASK);                                                                       40317220 T  0652:3
          FORGETSPACE([V[I,1]]);                                                                   40317230 T  0654:1
     END;                                                                                          40317240 T  0655:3
                                                                                                                    40317210
B:=V.[CF];                                                                                          40317300 T  0656:1
IF NEXTSLOT≠0 THEN                                                                                  40317310 T  0657:3
BEGIN                                                                                               40317320 T  0658:2
DISKWAIT(-B,30,FJ);                                                                                 40317400 T  0659:0
VR[-2×FI+29]:=H;                                                                                    40317500 T  0660:2
DISKWAIT(B,30,FJ);                                                                                  40317600 T  0663:0
END ELSE NEXTSLOT:=H;                                                                               40317610 T  0664:1
                                                                                                                    40317320
FORGETSPACE(B);                                                                                     40317700 T  0665:2
DDD:=DDD&A[CTC]; FORGETSPACE(AA);                                                                   40317800 T  0666:1
IF PBCOUNT > 0 THEN       % TELL OPERATOR                                          %791-            40320100 P  0668:2
BEGIN;STREAM(PBCOUNT,X←X←SPACE(10));                                                                40320200 T  0669:1
     BEGIN DS←11 LIT" THERE ARE"; X←DI; SI←LOC PBCOUNT;                                             40320300 T  0672:3
          DS←4 DEC; DS←18 LIT" PB FILES ON DISK←";                                                  40320400 T  0675:0
          DI←X; DS←3 FILL;                                                                          40320500 T  0677:3
     END; SPOUT(X);                                                                                 40320600 T  0678:1
                                                                                                                    40320300
END;                                                                                                40320700 T  0679:3
                                                                                                                    40320200
Z←USERD;SKBOTTOM;                                                                   %MC             40321000 T  0679:3
X:=-5; DDD[1]:=0;                                                                                   40321100 T  0680:2
 $ SET OMIT = NOT(SHAREDISK)                                                                        40321104 T  0682:3
 $ SET OMIT = SHAREDISK                                                                             40321129 T  0682:3
R:=0; VR:=AVTABLE;                                                                                  40321130 T  0682:3
 $ POP OMIT                                                                                         40321131 T  0684:2
RADD:=R;  R:=R-1 ;                                                                                  40321135 T  0684:2
 NT3:=NFUP,NEUF-1;  % DONT USE NT3 BETWEEN HERE AND 40334065                                        40321140 T  0686:2
 FOR NT2:=0 STEP 1 UNTIL NT3 DO                                                                     40321200 T  0688:1
    BEGIN I←RA←-1;RLEN←RL←0;RADD←RADD+(Z-USERDISKBOTTOM)×30;                                         40321300 T  0689:0
          FORTY:=(SU[X:=X+5],FORTYMILLDISK+1)×FORTY;                                                40321310 T  0694:0
  WHILE (C:=SU[X+(I:=I+1)]).DISKRUNNING AND I LEQ 4 DO                                              40321400 T  0697:2
IF NOT C.OCCUPIED THEN                                                                              40321500 T  0702:0
    BEGIN                                                                           %MC             40321600 T  0703:0
```

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IF C.[CF]=0 THEN                                                    %MC     40321700 T  0703:2
  BEGIN                                                             %MC     40321800 T  0704:3
   RA←RA+1;                                                         %MC     40321810 T  0705:1
   C:=0;                                                                    40321910 T  0706:2
      S:=(I+1)×FORTY;                                                       40322000 T  0707:1
   J←IF X+1=0 THEN                                                  %MC     40322100 T  0709:0
      FORTY-(DISKBOTTOM+5) ELSE FORTY;                                      40322150 T  0710:1
   END                                                              %MC     40322200 T  0713:1
                                                                                        40321800
      ELSE                                                          %MC     40322210 T  0713:1
   BEGIN AD←M[M[SU[X+1]]].[CF];RA←-1;     END;                     %MC     40322220 T  0713:1
                                                                                        40322220
DO                                                                  %MC     40322250 T  0718:1
   BEGIN                                                            %MC     40322300 T  0718:1
      IF C≠0 THEN BEGIN S←M[AD].[DA];J←M[1+AD].[DA] END;            %MC     40322400 T  0718:1
                                                                                        40322400
      S:=S+(X MOD 50)DIV 5×MN;                                              40322410 T  0724:0
      IF J>RLEN THEN RLEN:=J;                                               40322420 T  0726:3
      IF X GEQ 50 THEN S:=S+TM;                                             40322425 T  0728:3
      IF J GTR 0 AND (NT1:=S-J) GEQ DISKBOTTOM+3 THEN                       40322430 T  0731:1
      IF (Y:=DDD[ABS(R)]).DEND EQL NT1 THEN                                 40322440 T  0734:2
      BEGIN DDD[R]:=S&(L0:=Y.DSIZE+J)[TODSIZE];                             40322442 T  0737:1
     IF L0 GTR RLEN THEN RLEN:=L0 END                                       40322444 T  0741:2
                                                                                        40322442
        ELSE                                                        %MC     40322450 T  0743:2
       BEGIN                                                        %MC     40322460 T  0743:2
          IF R=AV1 THEN                                             %MC     40322470 T  0744:0
            BEGIN                                                   %MC     40322480 T  0744:3
               DISKWAIT(A,AV1,Z);Z←Z + AVBLOCK;R← -1;               %MC     40322600 T  0745:1
            END;                                                    %MC     40322700 T  0748:3
                                                                                        40322480
         DDD[R←R+1]← S& J[TODSIZE];RL←RL+1;                                 40322800 T  0748:3
          END;                                                      %MC     40323000 T  0753:1
                                                                                        40322460
         IF C≠0 THEN                                                %MC     40323100 T  0753:1
          IF M[AD].[CF]≠SEVEN7 THEN                                 %MC     40323200 T  0754:0
              AD←M[AD].[CF] ELSE                                    %MC     40323300 T  0756:2
              BEGIN                                                 %MC     40323400 T  0759:0
              K←-1;                                                 %MC     40323500 T  0759:2
               WHILE (B←(M[SU[X+I]]NX(K←K+1)))≠0 AND K≤15 DO        %MC     40323600 T  0760:2
                 FORGETSPACE(B);FORGETSPACE(SU[X+I]);               %MC     40323700 T  0766:1
              C←0;                                                  %MC     40323710 T  0769:0
              END;                                                  %MC     40323800 T  0769:3
                                                                                        40323400
        END UNTIL C=0;                                              %MC     40323900 T  0769:3
                                                                                        40322300
  END;                                                                      40324000 T  0771:0
                                                                                        40321600
IF (DDD[R].DEND MOD MN)=((NT1:=5×FORTY)-1) THEN DDD[R].DEND:=NT1+           40324102 T  0771:2
 NT2×MN;  % NT2 = X DIV 5                                                   40324104 T  0776:3
RL←RL+1;                                                                    40324120 T  0779:0
 VR[NT2+1]:=0&(SU[X].FORTYMILLDISK+1)[TOSPEED]&RL[TONUMENT]&                 40324200 T  0780:1
 RADD[TOSTARTWRD]&RLEN[TOMAXSIZ]&(NT2≥NEUP,[3:15] AND NT2<10)[TOEUNP];       40324210 T  0784:3
  IF R=AV1 THEN                                                             40324300 T  0790:1
    BEGIN                                                                   40324400 T  0791:0
      DISKWAIT(A,AV1,Z);                                                    40324500 T  0791:2
      Z←Z+AVBLOCK;R←-1;                                                     40325000 T  0792:3
```

```
    END;                                                                                    40326000 T  0795:0
                                                                                                        40324400
DDD[R:=R+1]:=400000 DIV(2-SU[X].FORTYMILLDISK)+(X MOD 100)DIV 5*MN+1;                       40327000 T  0795:0
  IF (LO:=RL DIV 4) LSS AVDIFFMIN THEN LO:=AVDIFFMIN ELSE                                   40328000 T  0801:2
  IF LO>AVDIFFMAX THEN LO←AVDIFFMAX;                                                        40329000 T  0804:2
    IF (R:=R+LO) GTR AV1 THEN                                                               40330000 T  0808:0
     BEGIN                                                                                  40331000 T  0809:3
      DISKWAIT(A,AV1,Z);Z←Z+AVBLOCK;                                                        40332000 T  0810:1
         R:=R-AV1 ;                                                                         40333000 T  0812:3
     END;                                                                                   40334000 T  0814:0
                                                                                                        40331000
FORTY:=40000 ;                                                                              40334054 T  0814:0
RADD:=R+1 ;                                                                                 40334055 T  0814:3
END;                                                                                        40334056 T  0816:0
                                                                                                        40321300
DISKWAIT(A,AV1,Z);                                                                          40334057 T  0818:1
 NT2:=NT3 + 3;  % NT2:=NEUP.NFUF+2                                                          40334060 T  0819:2
 FOR NT1:=NT3 STEP -1 UNTIL 0 DO                                                            40334065 T  0820:3
 IF (NT4:=(NOT SOCK[NT1+20]).[28:20]) ≠ 0 THEN % LOCK OUT THIS EU                           40334070 T  0823:0
 BEGIN EUMASK:=TWO(NT1) OR EUMASK;  % TURN ON EU LOCK OUT MASK                              40334075 T  0825:3
     IF NT1 THEN VR[NT1 DIV 2 + NT2].[8:20]:=NT4                                            40334077 T  0828:0
     ELSE        VR[NT1 DIV 2 + NT2].[28:20]:=NT4;                                          40334079 T  0830:3
 END;                                                                                       40334081 T  0836:1
                                                                                                        40334075
VR[0]:=P(DUP,LOD)&EUMASK[TOMAXS:Z];                                                         40334085 T  0838:2
 $ SET OMIT = NOT(SHAREDISK)                                                                40334308 T  0841:0
              FORGETSPACE(SU);                                                              40335000 T  0841:0
 $ SET OMIT = SHAREDISK                                                                     40335990 T  0842:0
              UNLOCKDIRECTORY;                                                              40336000 T  0842:0
                                                                                                        40336000
                                                                                                        40336000
$ POP OMIT                                                                                  40336010 T  0845:2
          TOGLE:=TOGLE OR ABORTMASK OR USERDISKMASK;                                        40336100 T  0845:2
            MESSAGETABLEBUILDER;                                                            40339000 T  0847:1
            FOR W←W STEP -2 WHILE ZSF[W]≠@14 DO                                             40353100 T  0847:3
            BEGIN                                                                           40353110 T  0852:0
                 IF W<0 THEN                                                                40353120 T  0852:0
                 BEGIN                                                                      40353130 T  0852:3
                      DISKWAIT(-(ZSF INX 0),30,ESPADD);                                     40353140 T  0853:1
                      FORGETESPDISK(ESPADD);                                                40353160 T  0855:2
                      ESPADD←ZSF[29];                                                       40353170 T  0856:1
                      W←26;                                                                 40353180 T  0857:1
                 END;                                                                       40353190 T  0858:0
                                                                                                        40353130
                 FORGETSPACE(DIRECTORYSEARCH(ZSF[W],ZSF[W+1],6));                           40353200 T  0858:0
            END;                                                                            40353210 T  0860:3
                                                                                                        40353110
            FORGETSPACE(ZSF); FORGETSPACE(SOCK);                                            40356550 T  0863:0
          SUSTATUS(A,DDD,0);                                                                40356800 T  0865:0
        END;                                                                                40400000 T  0866:2
                                                                                                        40004000
                                                                                                SIZE= 0867 WORDS
```

```
                PROCEDURE REALFILECLOSE(ALPHA); VALUE ALPHA; INTEGER ALPHA;%                    41000000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 01005
                BEGIN ARRAY FIB[*],FPB[*],HEADER[*];%                                           41001000 T  0000:0
STACK(F+1) = FIB
STACK(F+2) = FPB
STACK(F+3) = HEADER
                %%%     DONT ADD ANY DECLARATIONS BETWEEN "HEADER" AND "KIND" %%% WCP           41001500 T  0000:0
                INTEGER KIND,NBUFS,U,BLEN,CODE,UNLABELED,COBOL,I,J,FNUM;                        41002000 T  0000:0
STACK(F+4) = KIND
STACK(F+5) = NBUFS
STACK(F+6) = U
STACK(F+7) = BLEN
STACK(F+10) = CODE
STACK(F+11) = UNLABELED
STACK(F+12) = COBOL
STACK(F+13) = I
STACK(F+14) = J
STACK(F+15) = FNUM
                REAL MID,FID,R,D,C,FORMS,STATE;                                                 41003000 T  0000:0
STACK(F+16) = MID
STACK(F+17) = FID
STACK(F+20) = R
STACK(F+21) = D
STACK(F+22) = C
STACK(F+23) = FORMS
STACK(F+24) = STATE
              REAL RCW=+0,XTRA=-3;                                                              41003100 T  0000:0
STACK(F+0) = RCW
STACK(F-3) = XTRA
                LABEL PX,PBD;                                                   %P              41004000 T  0000:0
              LABEL DC19;    REAL STA;                                                          41004100 T  0000:0
STACK(F+25) = STA
                LABEL CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,CC;                             41005000 T  0000:0
              SWITCH SW:= CR,LP,MT,CLOSED,DK,SP,CP,BKUP,PP,PR,DC,CD,BKUP,DC19;                  41006000 T  0000:0
                LABEL EOF,ON,DNE,CLEANUP;%                                                      41007000 T  0000:0
                LABEL EOD;                                                                      41007100 T  0000:0
                REAL T1,T2,T3,IOD; ARRAY SEGO[*],SKEL[*]; LABEL L1,L2,L3;                       41007200 T  0000:0
STACK(F+26) = T1
STACK(F+27) = T2
STACK(F+30) = T3
STACK(F+31) = IOD
STACK(F+32) = SEGO
STACK(F+33) = SKEL
                REAL T,ACCESS;%                                                                 41017000 T  0000:0
STACK(F+34) = T
STACK(F+35) = ACCESS
                NAME SAIOD=T;                                                                   41017100 T  0000:0
STACK(F+34) = SAIOD
                BOOLEAN COMPGO;                                                                 41017200 T  0000:0
STACK(F+36) = COMPGO
                REAL TYPE;                                                                      41017300 T  0000:0
STACK(F+37) = TYPE
                DEFINE REW=CODE.[47:1]#,%                                                       41018000 T  0000:0
                       KRUNCH=NOT CODE.[42:1]#,                                                 41018100 T  0000:0
                       REL=CODE.[46:1]#,%                                                       41019000 T  0000:0
                       TIME=CODE.[45:1]#,%                                                      41020000 T  0000:0
                       LOCK=NOT CODE.[44:1]#,%                                                  41021000 T  0000:0
```

```
                PURGE=NOT CODE.[43:1]#;%                                                                41022000 T  0000:0
              LABEL CLOSEOUT;%                                                                          41035000 T  0000:0
              LABEL EOFIT;%                                                                             41036000 T  0000:0
              CODE←(NOT *P(.ALPHA)).[18:15];%                                                           41038000 T  0000:0
              ALPHA←P(.ALPHA,LOD).[33:15];%                                                             41039000 T  0009:3
              FIB←M[ALPHA-3]; FPB←PRT[P1MIX,3];%                                                        41040000 T  0011:1
              IF (STATE←FIB[5]).[42:1] THEN GO TO CLOSED;%                                              41041000 T  0014:3
              NBUFS←FIB[13].[1:9]; FNUM←FIB[4].[13:11];%                                                41042000 T  0017:0
              U←FIB[15].[24:6];                                                                         41043000 T  0020:0
              UNLABELED←FIB[4].[2:1];%                                                                  41044000 T  0021:2
              BLEN←FIB[18].[3:15];%                                                                     41045000 T  0023:0
              STREAM(S←FPB[FNUM],D←M[D]);%                                                              41046000 T  0024:2
                    BEGIN SI←S; DS←2 WDS; DS←3 OCT; DS←5 OCT; DS← OCT END;%                             41047000 T  0025:3
                                                                                                                          41047000
              IF D<0 THEN D←D.[18:30];%                                                                 41047500 T  0027:1
              FORMS←FPB[FNUM+3].[42:1];%                                                                41048000 T  0029:3
              I←FIB[13].[28:10];%                                                                       41049000 T  0031:3
              IF (R=0 AND I≠1) OR R≠0 THEN R←I;%                                                        41050000 T  0033:1
              COBOL←(FIB[13] AND 1)&([FIB].[8:10]=22)[1:47:1];  % COBOL 60 & 68                         41051000 T  0037:1
              IF COBOL>0 OR FIB[4].[7:1] THEN  % COBOL 60 OR SORT                                       41051100 T  0041:0
              M[FIB INX NOT 1].[3:6]←2                                                                  41051200 T  0043:0
              ELSE M[ALPHA-7].[3:6]←2;                                                                  41051300 T  0045:1
              IF (I←J←FIB[10].[3:15])≠0 THEN   %THERE-S A BUFFER RING TO MARK                           41051400 T  0051:0
              DO M[I-2].[3:6]←2 UNTIL (I←M[I].[FF]-2)=J;                                                41051500 T  0053:2
              COMMENT MARK IT ALL DATA TO PROTECT IT FROM NSEC DS;                                      41051600 T  0060:3
              IF FIB.[7:1] THEN CHECKJOBORFILEMESS(P1MIX,ALPHA-3,U);                                    41051620 T  0060:3
              GO TO SW[KIND←FIB[4].[8:4]];%                                                             41052000 T  0064:0
CR:CC:CP:LP:SP:MT:PP:PR:CD:                                                                             41054000 T  0073:1
              OTHERCLOSE(0);                                                                            41055000 T  0073:1
              GO TO CLEANUP;%                                                                           41142000 T  0074:0
BKUP: TYPE:=FPB[FNUM+3].[43:5]; BACKCLOSE(0);                                                           41144000 T  0074:2
CLOSEOUT:;  STATE.[39:4]←1; TIME←1;%                                                                    41187000 T  0077:1
CLEANUP:;%                                                                                              41188000 T  0081:2
              IF NOT STATE.[41:1] THEN%                                                                 41189000 T  0082:0
              IF KIND≤2 OR KIND=11 OR KIND≥6 AND KIND≤9                                                 41190000 T  0083:0
 $ SET OMIT = NOT(PACKETS)                                                                              41190099 T  0086:1
              OR KIND=4                                                                                 41190100 T  0086:1
 $ POP OMIT                                                                                             41190101 T  0087:2
              THEN BEGIN                                                                                41190200 T  0087:2
 $ SET OMIT = PACKETS                                                                                   41190299 T  0088:3
              FILEMESSAGE((                                                                             41190600 T  0088:3
 $ SET OMIT = NOT(PACKETS)                                                                              41190699 T  0089:0
                    IF PURGE THEN " PRG" ELSE IF LOCK THEN " LOK" ELSE                                  41190700 T  0089:0
 $ POP OMIT                                                                                             41190701 T  0093:2
                    " REL")&T[NU[U][6:30:18],0,MID,FID,                                                 41190800 T  0093:2
                    IF KIND=2 OR KIND=9 THEN R ELSE 0,                                                  41190900 T  0095:3
                    IF KIND=2 OR KIND=9 THEN D ELSE 0,                                                  41191000 T  0099:0
                    C,IF KIND=4 THEN 64 ELSE                                                            41191100 T  0102:1
                    CLOSEMESS AND ((T:=JAR[P1MIX,0])>0                                                  41191200 T  0104:2
                    OR (T<0) AND COPNMESS));                                                            41191300 T  0106:3
              END;                                                                                      41191500 T  0109:3
                                                                                                                          41190200
              IF (FIB[5]←STATE).[42:1] THEN FIB[4].[8:4]←3;%                                            41194000 T  0109:3
              IF (T←FIB[10].[3:15])≠0 THEN   %THERE-S A BUFFER RING TO FORGET                           41195000 T  0114:2
              BEGIN   %FORGETTING IT                                                                    41196000 T  0116:2
                    FOR I←0 STEP 1 UNTIL NBUFS-1 DO%                                                    41197000 T  0117:0
                    BEGIN J←M[T].[18:15]-2;%                                                            41198000 T  0121:1
```

```
                    FORGETSPACE(T);%
                    T←J;%
                    M[ALPHA+1]←P(DUP,LOD)&0[2:2:1]&1[25:47:1]%
                                &(ALPHA+1)[33:33:15];%
               END;%

               FIB[10].[3:15]←0; FIB[16].[CF]←0;                    %501=
          END;%

          IF NOT UNLABELED THEN%
          IF KIND≠0 THEN%
          IF (T←M[ALPHA-2].[33:15])≠0 THEN%
               FORGETSPACE(T-2);%
          M[ALPHA-2]←P(DUP,LOD)&P(0,XCH)[8:8:10];%
          FIB[6]←FIB[7]←0;%
          IF TIME THEN STOPTIMING(FNUM,1023);
        IF COBOL>0 OR FIB[4].[7:1] THEN          % COBOL 60 OR SORT
             M[FIB INX NOT 1].[3:6]:=6 ELSE M[ALPHA-7].[3:6]:=4;
          GO TO CLOSED;%
DK::      DISKCLOSE(0);
          GO CLEANUP;%
 DC::
 $ SET OMIT = NOT(DATACOM )
DC19::
 $ SET OMIT = NOT(DATACOM)
          GO CLOSEOUT;
 CLOSED::
          ROW:=XTRA;
END FILE CLOSE;
```

```
41199000 T  0123:3
41200000 T  0124:2
41201000 T  0125:1
41202000 T  0128:1
41203000 T  0130:2
                    41198000
41204000 P  0134:0
41205000 T  0138:2
                    41196000
41206000 T  0138:2
41207000 T  0139:0
41208000 T  0140:1
41209000 T  0143:3
41210000 T  0145:2
41211000 T  0149:0
41212000 T  0151:1
41212100 T  0153:2
41212200 T  0155:2
41213000 T  0163:2
41215000 T  0164:0
41269000 T  0164:3
41281000 T  0165:1
41281999 T  0165:1
41307010 T  0165:1
41307020 T  0166:0
41307290 T  0166:0
41308000 T  0166:2
41309000 T  0166:2
41310000 T  0167:3
                    41001000
          SIZE= 0168 WORDS
```

```
PROCEDURE LINKUP(TYPE,KEY); VALUE TYPE,KEY; REAL TYPE,KEY;                                  41310100 T  0000:0
                                                                                                START OF REL SEGMENT; DISK ADDRESS = 01011
  BEGIN                                                                                     41310200 T  0000:0
    KEY := P(.KEY,LOD) INX 0 -1;                                                            41310300 T  0000:0
    M[KEY+1]:= (*P(DUP))&TYPE[3:42:6]&(LOGENTRY:=LOGENTRY+1)[25:34:14];                     41310400 T  0002:0
    M[KEY+2] := (*P(DUP)) & (XCLOCK + P(RTR))[3:24:24];                                     41310500 T  0007:1
    IF (LOGHOLDER INX 0) = 0 THEN                                                           41310600 T  0011:0
    BEGIN LOGHOLDER.[CF] := KEY;                                                            41310700 T  0012:1
          INDEPENDENTRUNNER(P(.MAINTLOGGER),0,100);                                         41310800 T  0014:0
    END ELSE M[LOGHOLDER.[FF]].[CF] := KEY;                                                 41310900 T  0015:1
                                                                                                                  41310700
    M[KEY].[CF] := 0; LOGHOLDER.[FF] := KEY;                                                41311000 T  0018:2
    IF (NUMAINTMESS:=NUMAINTMESS+1) > 0 THEN SLEEP([NUMAINTMESS],-0);                       41311100 T  0022:0
  END  LINKUP;                                                                              41311200 T  0026:0
                                                                                                                  41310200
                                                                                                              SIZE= 0027 WORDS
```

```
                PROCEDURE CHECKJOBORFILEMESS(MIX,FIB,U);                                41312000 T  0000:0
                                                                                START OF REL SEGMENT; DISK ADDRESS = 01012
                  VALUE MIX,FIB,U; REAL MIX,FIB,U;                              41312100 T  0000:0
                  BEGIN                                                         41312200 T  0000:0
                    REAL KEY,FNUM;                                              41312300 T  0000:0
STACK(F+1) = KEY
STACK(F+2) = FNUM
                    IF NOT JAR[MIX,2].[3:1] THEN                                41312400 T  0000:0
                    BEGIN                                                       41312500 T  0002:1
                      JAR[MIX,2].[3:1] := 1;                                    41312600 T  0002:3
                      KEY := TYPEDSPACE(5,MAINTBUFFAREAV);%          %167-      41312700 P  0005:3
                      M[KEY-2].[9:6] := 0;                                      41312800 T  0008:0
                      M[KEY  ] := 0 & MIX[20:48:5];                             41312900 T  0011:1
                      M[KEY+1] := JAR[MIX,5].[6:18];                            41313000 T  0013:3
                      M[KEY+2] := JAR[MIX,5];                                   41313100 T  0017:0
                      M[KEY+3] := JAR[MIX,0];                                   41313200 T  0019:3
                      M[KEY+4] := JAR[MIX,1];                                   41313300 T  0022:2
                      LINKUP(12,KEY);                                           41313400 T  0025:1
                    END;                                                        41313500 T  0026:1
                                                                                                41312500
                    IF FIB≠0 THEN IF NOT M[FIB].[6:1] THEN                      41313600 T  0026:1
                    BEGIN                                                       41313700 T  0029:1
                      M[FIB].[6:1] := 1;                                        41313800 T  0029:3
                      FNUM := M[M[FIB] INX 4].[13:11];                          41313900 T  0032:2
                      KEY := TYPEDSPACE(5,MAINTBUFFAREAV);%          %167-      41314000 P  0035:3
                      M[KEY-2].[9:6] := 0;                                      41314100 T  0038:0
                      M[KEY  ] := 0 & MIX[20:43:5]                              41314200 T  0041:1
                                   & ((FNUM DIV ETRLNG)+1)[9:39:9];             41314300 T  0042:2
                      M[KEY+1] := JAR[MIX,5].[6:18];                            41314400 T  0045:3
                      M[KEY+2] := M[(FNUM:= PRT[MIX,3] INX FNUM)+3];            41314500 T  0049:0
                      M[KEY+3] := M[FNUM];                                      41314600 T  0054:0
                      M[KEY+4] := M[FNUM+1];                                    41314700 T  0056:3
                      LINKUP(13,KEY);                                           41314800 T  0060:0
                  END;END CHECKJOBORFILEMESS;                                   41314900 T  0061:0
                                                                                                41313700
                                                                                                41312200
                                                                                        SIZE= 0062 WORDS
```

```
                PROCEDURE LOGOUTMAINT(B); VALUE B; REAL B;                                  41316000 T  0000:0
                                                                          START OF REL SEGMENT; DISK ADDRESS = 01015
                  BEGIN                                                                     41316100 T  0000:0
                    REAL RCW = +0;                                                          41316200 T  0000:0
STACK(F+0) = RCW
                    REAL MSCW=-2;                                                           41316250 T  0000:0
STACK(F-2) = MSCW
                    REAL FH = +1, T1 = +2, T2 = +3, T3 = +4, SAVENTRY = +5;                 41316300 T  0000:0
STACK(F+1) = FH
STACK(F+2) = T1
STACK(F+3) = T2
STACK(F+4) = T3
STACK(F+5) = SAVENTRY
                    REAL MFID = +6, FID = +7; BOOLEAN FORKED = +8;                          41316400 T  0000:0
STACK(F+6) = MFID
STACK(F+7) = FID
STACK(F+10) = FORKED
                    INTEGER LASTL = +9, SEGNO = +10, SEGSIZ = +11, LDATE = +12;             41316410 T  0000:0
STACK(F+11) = LASTL
STACK(F+12) = SEGNO
STACK(F+13) = SEGSIZ
STACK(F+14) = LDATE
                    LABEL CS,SCAN,NEWLOG,BUILDMESS,EXIT,FINISHUP;                           41316500 T  0000:0
                    SUBROUTINE FIXCOLDHDR;                                                  41316505 T  0000:0
                    BEGIN                                                                   41316510 T  0001:0
                      MYFH INX 0]:= @0000500036000601;                                      41316515 T  0001:0
                      MYFH INX 1]:= (XCLOCK+P(RTR)) & LDATE[6:30:18];                       41316520 T  0003:0
                      STREAM(DATE,X:=FH INX 3);                                             41316525 T  0006:2
                      BEGIN SI:=LOC DATE; DS:=8 OCT; DI:=X; DS:=2 LIT"+#";                  41316530 T  0008:0
                            SI:=X; SI:=SI+5; DS:=3 CHR;                                     41316535 T  0009:1
                      END;                                                                  41316540 T  0010:0
                                                                                                       41316530
$ SET OMIT = NOT(SHAREDISK)                                                                 41316545 T  0010:1
$ SET OMIT = SHAREDISK                                                                      41316575 T  0010:1
                      MYFH INX 4]:= 0 & 72[9:41:7]; % SYSTEM DATA FILE                      41316580 T  0010:1
$ POP OMIT                                                                                  41316585 T  0013:1
                      MYFH INX 7]:= (LOGSIZE*6)-1;                                          41316590 T  0013:1
                    END FIXCOLDHDR;                                                         41316595 T  0016:1
                                                                                                       41316510
                    P(0,0,0,0,0,0,0,0,0,0,0,0);                                             41317100 T  0018:0
                    IF FORKED:= B=0 THEN  % INDEPENDENT RUNNER                              41317200 T  0021:0
                    BEGIN IF MROW > 0 THEN SLEEP([MROW],-0);                                41317300 T  0022:1
                          MROW := ABS(MROW);                                                41317400 T  0025:3
                          LASTL := LOGENTRY;                                                41317500 T  0026:3
                          LOGENTRY := 0;                                                    41317600 T  0027:2
                    END ELSE LASTL:=ABS(B)-2;                                               41317700 T  0028:1
                                                                                                       41317300
                    FID:= "MNTLOG "                                                         41317710 T  0030:1
$ SET OMIT = NOT(SHAREDISK)                                                                 41317719 T  0030:2
                    ;                                                                       41317730 T  0030:2
                    STREAM(DATE,C:=[LDATE]); BEGIN SI:=LOC DATE; DS:=8 OCT; END;            41317780 T  0031:0
                                                                                                       41317780
                    T1:=SPACE(335);                                                         41317790 T  0032:3
                    IF (FH:=DIRECTORYSEARCH(MFID:="MAINT  ",T3:="LOG     "                  41317800 T  0035:0
$ SET OMIT = NOT(SHAREDISK)                                                                 41317900 T  0036:1
                                                                        ,5))=0 THEN         41318100 T  0036:1
                    BEGIN                                                                   41318200 T  0038:1
```

```
      FH:=SPACE(30);                                                                  41318210 T  0038:3
      MOVE(30,FH-1,FH);                                                               41318220 T  0041:0
      M[FH+ 9]:= 1;                                                                   41318230 T  0043:0
      M[FH+10]:= GETUSERDISK(-(M[FH+8]:=LOGSIZE:=1000));                              41318240 T  0045:0
CS:   FIXCOLDHDR;                                                                     41318250 T  0050:1
      IF FH.[FF]=0 THEN ENTERUSERFILE(-MFID,T3,FH-1)                                  41318360 T  0051:0
      ELSE DISKWAIT(FH INX 0,30,FH,[FF]);                                             41318370 T  0052:1
      FID:= T3;                                                                       41318380 T  0061:1
      MROW:= M[FH INX 10];                                                            41318400 T  0062:0
      GO BUILDMESS;                                                                   41318500 T  0064:0
    END;                                                                              41318600 T  0064:2
                                                                                                  41318200
    LOGSIZE:= M[FH INX 8];                                                            41318610 T  0064:2
    IF M[FH INX 4].[45:1] THEN FORKED:=FORKED OR 2; % JUST COLD STARTED               41318620 T  0066:2
    IF B>0 THEN                                                                       41318630 T  0070:1
    BEGIN                                                                             41318640 T  0071:0
$ SET OMIT = NOT(SHAREDISK)                                                           41318649 T  0071:2
$ SET OMIT = SHAREDISK                                                                41318679 T  0071:2
      M[FH INX 4]:= 0 & 72[9:41:7]; % SYSTEM DATA FILE                                41318680 T  0071:2
$ POP OMIT                                                                            41318681 T  0074:2
      DISKWAIT(-T1,5,MROW:=M[FH INX 10]);                                             41318740 T  0074:2
      MLOG:= SEGNO:= M[T1].[24:15];                                                   41318760 T  0077:3
SCAN: IF MLOG≥LOGSIZE-1 THEN                                                          41318780 T  0080:1
      BEGIN                                                                           41318800 T  0081:2
        IF (FORKED AND 2)≠0 THEN GO CS;                                               41318810 T  0082:0
        IF MLOG≠SEGNO THEN DISKWAIT(-T1,5,MROW);                                      41318820 T  0083:3
        M[T1]:= P(DUP,LOD) & 1[2:47:1];                                               41318840 T  0086:2
        DISKWAIT(T1,5,MROW);                                                          41318860 T  0089:1
        MLOG:= IF SEGNO<LOGSIZE-1 THEN SEGNO ELSE LOGSIZE-2;                          41318880 T  0090:2
        GO NEWLOG;                                                                    41318900 T  0094:1
      END;                                                                            41318920 T  0094:3
                                                                                                  41318800
      DISKWAIT(-T1,30,MROW+(MLOG:=MLOG+1));                                           41318940 T  0094:3
      IF M[T1]≠ NOT 0 THEN GO SCAN;                                                   41318960 T  0097:3
      MLOG:= MLOG-1;                                                                  41318980 T  0100:0
      LOGENTRY:= M[T1+1].[CF]; LASTL:= M[T1+1].[FF];                                  41319000 T  0101:1
      IF (T3:=LOGHOLDER INX 0) ≠ 0 THEN                                               41319020 T  0106:1
      WHILE T3≠0 DO                                                                   41319040 T  0108:0
      BEGIN                                                                           41319060 T  0109:3
        IF M[T3]<0 THEN M[T3].[FF]:= LOGENTRY:=LOGENTRY+1                             41319080 T  0109:3
        ELSE M[T3+1].[25:14]:= LOGENTRY:=LOGENTRY+1;                                  41319100 T  0113:1
        T3:= M[T3] INX 0;                                                             41319120 T  0119:3
      END;                                                                            41319140 T  0121:3
                                                                                                  41319060
      IF LASTL≠0 THEN                                                                 41319160 T  0122:1
      BEGIN                                                                           41319180 T  0123:0
        DISKWAIT(-T1,30,MROW+(SEGNO:=LASTL DIV 30));                                  41319200 T  0123:2
        T3:= (M[T1+(SEGSIZ:=LASTL MOD 30)].[39:9]+1)×5;                               41319220 T  0126:2
        IF T3>5 THEN IF LASTL+T3 > (T2:=(MLOG+1)×30) THEN                             41319240 T  0131:0
        BEGIN                                                                         41319260 T  0135:0
          M[T1+SEGSIZ]:= P(DUP,LOD) & 1[2:47:1] &                                     41319280 T  0135:2
                        ((T2-LASTL) DIV 5 -1)[39:39:9];                               41319300 T  0138:1
          DISKWAIT(T1,30,MROW+SEGNO);                                                 41319320 T  0141:1
      END;END;                                                                        41319340 T  0143:0
                                                                                                  41319260
                                                                                                  41319180
END;                                                                                  41319360 T  0143:0
```

```
                                                                                                                    41318640
    M[T1   ] := 5 & 62[3:42:6] &
                (MLOG +(MDELTA≠0))[24:33:15] & LASTL[9:33:15];                                          41319600 T  0143:0
    M[T1+1] := LDATE & (XCLOCK+P(RTR))[3:24:24];                                                        41319700 T  0145:0
    M[T1+2] := PATCHLEVEL;                                                                              41319900 T  0148:2
    M[T1+3] := LOGVERSION;                                                                              41320000 T  0152:0
    M[T1+4] := DATE;                                                                                    41320100 T  0154:0
    DISKWAIT(T1,5,MROW);                                                                                41320200 T  0157:0
    IF R>0 THEN % CALLED FROM INITIALIZE                                                                41320220 T  0159:0
    BEGIN                                                                                               41320240 T  0160:1
      IF (FORKED AND 2)≠0 THEN FIXCOLDHDR;                                                              41320250 T  0161:0
      DISKWAIT(FH INX 0,30,FH.[FF]);                                                                    41320255 T  0161:2
      GO FINISHUP;                                                                                      41320260 T  0164:0
    END;                                                                                                41320270 T  0166:1
                                                                                                        41320280 T  0168:0
                                                                                                                    41320250
NEWLOG:
    IF HOLDFREE=0 THEN SLEEP(.TOGLE],HOLDMASK);                                                         41320300 T  0168:0
    LOCKTOG(HOLDMASK);                                                                                  41320310 T  0168:0
                                                                                                        41320320 T  0171:1
    DISKWAIT(-T1,-30,DIRECTORYTOP-SYSNO);                                                                           41320320
    SEGNO:= (M[T1+22].[38:10] +1) MOD 1000;                                                             41320330 T  0174:3
    M[T1+22]:= P(DUP,LOD) & SEGNO[38:38:10];                                                            41320340 T  0177:0
    DISKWAIT(T1,-30,DIRECTORYTOP-SYSNO);                                                                41320345 T  0180:2
    UNLOCKTOG(HOLDMASK);                                                                                41320350 T  0183:3
                                                                                                        41320355 T  0185:3
                                                                                                                    41320355
    STREAM(A:=[ACTDATE],B:=SEGNO,C:=[MFID]);                                                            41320360 T  0189:1
    BEGIN                                                                                               41320370 T  0190:2
      S1:=A; SI:=SI+2; DI:=DI+1; DS:=4 CHR; SI:=LOC B; DS:=3 DEC;                                       41320380 T  0190:2
    END;                                                                                                41320390 T  0192:0
                                                                                                                    41320370
    IF DIRECTORYSEARCH(-MFID,FID,5) ≠ 0 THEN GO NEWLOG;                                                 41320400 T  0192:1
    M[FH INX 3]:= P(DUP,LOD) & LDATE[12:30:18]; % ACCESSED                                              41320410 T  0194:3
    MOVE(10,FH INX 0,T1);                                                                               41320420 T  0198:0
    M[FH INX 1]:= (XCLOCK+P(RTR)) & LDATE[6:30:18];                                                     41320430 T  0200:0
    M[FH INX 3]:= P(DUP,LOD) & LDATE[30:30:18]; % CREATION                                              41320440 T  0203:2
    M[T1+ 4]:= 0 & 1[9:47:1]; % TYPE DATA                                                               41320450 T  0206:3
    M[T1+ 7]:= (T2:= (MLOG+(MDELTA≠0)+2))x6 -1;                                                         41320460 T  0209:3
    M[T1+ 8]:= T2+10; % TO SIMPLIFY DUMPING                                                             41320470 T  0214:3
    M[T1+ 9]:= 2;                                                                                       41320480 T  0217:1
    M[T1+10]:= 0; MOVE(20,[M[T1+10]],[M[T1+11]]);                                                       41320490 T  0219:1
    IF (M[T1+10]:= GETUSERDISK(-T2-10 OR M)) = 0 THEN                                                   41320500 T  0224:3
    BEGIN                                                                                               41320550 T  0229:1
      STREAM(A:=[MFID],C:=T3:=SPACE(5));                                                                41320600 T  0229:3
        BEGIN                                                                                           41320700 T  0232:3
        DS:=18 LIT"-NO USER DISK FOR "; SI:=A; SI:=SI+1;                                                41320800 T  0232:3
        DS:=7 CHR; DS:=LIT"/"; SI:=SI+1; DS:=7 CHR; DS:=LIT"←";                                         41320900 T  0235:3
        END;                                                                                            41321000 T  0237:2
                                                                                                                    41320700
      SPOUT(T3);                                                                                        41321100 T  0237:3
      M[T1+10]:= GETUSERDISK(-T2-10);                                                                   41321200 T  0239:0
    END;                                                                                                41321300 T  0242:2
                                                                                                                    41320550
    T3:=0; SEGNO:=M[T1+10];                                                                             41321350 T  0242:2
    DO BEGIN                                                                                            41321400 T  0245:1
      DISKWAIT(-T1-31,300,MROW+T3);                                                                     41321450 T  0245:1
      DISKWAIT(T1+31,300,SEGNO+T3);                                                                     41321500 T  0247:3
    END UNTIL (T3:=T3+10) GEQ T2;                                                                       41321550 T  0250:0
```

```
                                                                                                   41321400
    ENTERUSERFILE(-MFID,FID,T1-1);                                             41321600 T  0252:1
    DISKWAIT(FH INX 0,30,FH,[FF]);                                             41321650 T  0254:2
BUILDMESS:                                                                     41321700 T  0256:3
    MLOG:= MDELTA:= 0;                                                         41321750 T  0256:3
    M[T1   ]:= 5 & 62[3:42:6];                                                 41321800 T  0258:0
    M[T1+ 1]:= LDATE & (XCLOCK+P(RTR))[3:24:24];                               41321900 T  0260:2
    M[T1+ 2]:= PATCHLEVEL;                                                     41322000 T  0264:0
    M[T1+ 3]:= LOGVERSION;                                                     41322100 T  0266:0
    M[T1+ 4]:= DATE;                                                           41322200 T  0269:0
    M[T1+30]:= NOT 0;                                                          41322300 T  0271:0
    M[T1+31]:= NUMAINTMESS+100;                                                41322400 T  0273:1
    DISKWAIT(T1,32,MROW);                                                      41322450 T  0275:3
    STREAM(A:=[MFID],TOG:=MFID="MAINT  ",M:=MROW,B:=T1);                       41322500 T  0277:0
      BEGIN                                                                    41322600 T  0279:0
      DS:=29 LIT"#NEW MAINTENANCE LOG FILE IS "; SI:=A; SI:=SI+1;              41322700 T  0279:0
      DS:=7 CHR; DS:=LIT"/"; SI:=SI+1; DS:=7 CHR; DS:=LIT"←";                  41322800 T  0283:2
      TOG(DI:=DI-1; DS:=4 LIT" AT "; SI:=LOC M; DS:=8 DEC; DS:=LIT"←";         41322820 T  0285:1
          DI:=DI-9; DS:=7 FILL);                                               41322840 T  0287:3
      END;                                                                     41322900 T  0288:2
                                                                                                   41322600
  EXIT:                                                                        41323000 T  0288:3
    SPOUT(T1);                                                                 41323100 T  0288:3
    IF B>0 THEN                                                                41323110 T  0290:0
    BEGIN                                                                      41323120 T  0290:3
      T1 := TYPEDSPACE(15,MAINTBUFFAREAV);%                        %167-       41323130 P  0291:1
FINISHUP:                                                                      41323140 T  0293:2
      MOVE(10,B,T1+2);                                             %144-       41323150 P  0293:2
      M[T1  ]:= 2;                                                             41323160 T  0295:2
      M[T1+1]:= LDATE;                                                         41323170 T  0297:0
      LINKUP(15,T1);                                                           41323180 T  0299:0
    END ELSE                                                                   41323190 T  0300:0
                                                                                                   41323120
    IF (T1:=P(.MAINTLOGARRAY,LOD) INX 0)≠0 THEN MOVE(31,T1-2,T1-1);            41323300 T  0300:0
    T1 := FH INX 0;                                                            41323400 T  0308:0
    WHATMCP(FH);                                                               41323500 T  0309:1
    MOVE(26,FH,T1+4); FORGETSPACE(FH);                                         41323550 T  0310:0
    STREAM(KTR:=T1+4:);                                                        41323600 T  0312:3
    BEGIN SI:=KTR;                                                             41323700 T  0314:1
          4(52(IF SC≠"←" THEN SI:=SI+1 ELSE JUMP OUT 2 TO LL));                41323800 T  0314:2
    LL:   KTR:=SI;                                                             41323900 T  0317:1
    END;                                                                       41324000 T  0317:2
                                                                                                   41323700
    NT1:= P INX 0;                                                             41324100 T  0317:3
    M[T1]:= (NT1-T1) DIV 5;                                                    41324200 T  0318:3
    M[T1+1]:= LDATE;                                                           41324300 T  0321:1
 $ SET OMIT = NOT(SHAREDISK)                                                   41324400 T  0323:1
 $ SET OMIT = SHAREDISK                                                        41324700 T  0323:1
    STREAM(A:=[AVTABLE[1]],N:=NEUP,NEUF,D:=T1+3);                              41324800 T  0323:1
 $ POP OMIT                                                                    41324801 T  0325:3
    BEGIN SI:=LOC N; DS:=WDS; DI:=DI-6; SI:=A; SI:=SI+4;                       41324900 T  0325:3
          N(IF SB THEN DS:=SET ELSE DS:=RESET; SI:=SI+8);                      41325000 T  0327:0
    END;                                                                       41325100 T  0329:1
                                                                                                   41324900
 $ SET OMIT = NOT(SHAREDISK)                                                   41325200 T  0329:2
    M[T1+2] := MCPBASE;                                                        41325400 T  0329:2
    LINKUP(16,T1);                                                             41325500 T  0331:2
```

```
  IF FORKED THEN BEGIN MROW:=NABS(MROW); KILL([MSCW]); END;
END LOGOUTMAINT;
```

```
41325600 T  0332:2
                41325600
41325700 T  0335:0
                41316100
        SIZE= 0336 WORDS
```

```
                PROCEDURE MAINTLOGGER(B); VALUE B; REAL B;                                                  41327000 T  0000:0
                                                                                                  START OF REL SEGMENT; DISK ADDRESS = 01027
                  BEGIN                                                                                     41327100 T  0000:0
                    REAL RCW = +0;                                                                          41327200 T  0000:0
STACK(F+0) = RCW
                    REAL MSCW=-2;                                                                           41327250 T  0000:0
STACK(F-2) = MSCW
                    ARRAY MLA = MAINTLOGARRAY[*];                                                           41327300 T  0000:0
PRT(77) = MLA
                    REAL KLUDGE = +1, KEY = +2, TRANS = +3, RECS = +4, WT = +5;                             41327400 T  0000:0
STACK(F+1) = KLUDGE
STACK(F+2) = KEY
STACK(F+3) = TRANS
STACK(F+4) = RECS
STACK(F+5) = WT
                    REAL WMCP  = +6, WLOG = +7, WD = +8, A = +9, LASTENTRY = +10;                           41327500 T  0000:0
STACK(F+6) = WMCP
STACK(F+7) = WLOG
STACK(F+10) = WD
STACK(F+11) = A
STACK(F+12) = LASTENTRY
                    REAL T1 = +11, T2 = +12, U = +13;                                                       41327600 T  0000:0
STACK(F+13) = T1
STACK(F+14) = T2
STACK(F+15) = U
                    REAL LOCN= WLOG, NUM= WD;                                                               41327700 T  0000:0
STACK(F+7) = LOCN
STACK(F+10) = NUM
                    LABEL LOGANOTHER,RECYCLE,KILLL;                                                         41327800 T  0000:0
                    P(0,0,0,0,0,0,0,0,0,0,0,0,0);                                                           41328000 T  0000:0
                    IF MROW > 0 THEN SLEEP([MROW],-0);                                                      41328200 T  0003:1
                    MROW := ABS(MROW);                                                                      41328300 T  0006:1
                    IF (A:=P(,MLA,LOD) INX 0) = 0 THEN                                                      41328400 T  0007:1
                    BEGIN                                                                                   41328500 T  0009:1
                      MLA := [M[(A:=GETSPACE(33,MAINTBUFFAREAV,0)+3)]] & 32[8:38:10];%                      41328600 P  0009:3
                      MOVE(31,A-2,A-1);                                                                     41328700 T  0014:0
                      MLA[30] := NOT 0;                                                                     41328800 T  0016:2
                      IF MDELTA≠0 THEN DISKWAIT(-A,30,MROW+MLOG+1);                                         41328900 T  0018:0
                    END;                                                                                    41329000 T  0021:3
                                                                                                                        41328500
                  LOGANOTHER:                                                                               41329100 T  0021:3
                    IF M[LOCN:=LOGHOLDER INX 0] < 0 THEN                                                    41329200 T  0021:3
                    BEGIN                                                                                   41329300 T  0024:1
                      MOVE(4,LOCN,[TRANS]); KLUDGE := TRANS INX 0;                                          41329400 T  0024:3
                      KEY := -0 & TRANS[26:20:13] & (TRANS,[2:1]+4)[3:42:6] &                               41329500 T  0027:2
                                  TRANS[9:9:9] & TRANS[18:18:2] & TRANS[20:4:5];                            41329600 T  0030:3
                      TRANS:= TRANSACTION[U:=TRANS,[2:2]+16]&(XCLOCK+P(RTR))[3:24:24];                      41329700 T  0034:2
                      LOGHOLDER,[CF] := LOCN := [KLUDGE] INX 0;                                             41329800 T  0038:2
                      IF KLUDGE=0 THEN LOGHOLDER,[FF] := LOCN;                                              41329900 T  0040:3
                    END;                                                                                    41330000 T  0043:1
                                                                                                                        41329300
                    NUM := (M[LOCN+1],[39:9]+1) × 5;                                                        41330100 T  0043:1
                    IF (LASTENTRY:=(MLOG+1)×30+MDELTA) + NUM > (LOGSIZE-1)×30 THEN                          41330200 T  0046:3
                    BEGIN                                                                                   41330300 T  0051:0
                      IF MDELTA≠0 THEN                                                                      41330400 T  0051:2
                      BEGIN MLA[31]:=LOGENTRY; DISKWAIT(A,32,MROW+MLOG+1); END;                             41330500 T  0052:1
                                                                                                                        41330500
```

```
    LOGOUTMAINT(-(M[LOCN+1].[25:14]+1));                                    41330600 T  0056:1
    LOGENTRY := 0; T1 := LOCN;                                              41330700 T  0059:2
    WHILE T1 ≠ 0 DO                                                         41330800 T  0061:0
    BEGIN                                                                   41330900 T  0062:1
      IF M[T1]<0 THEN M[T1].[FF] := LOGENTRY:=LOGENTRY+1                    41331000 T  0062:1
      ELSE M[T1+1].[25:14] := LOGENTRY:=LOGENTRY+1;                         41331100 T  0065:3
      T1 := M[T1] INX 0;                                                    41331200 T  0072:1
    END;                                                                    41331300 T  0074:1
                                                                                        41330900
    LASTENTRY := 30;                                                        41331400 T  0074:3
  END;                                                                      41331500 T  0075:2
                                                                                        41330300
RECYCLE:                                                                    41331600 T  0075:2
  IF (T1:=30-MDELTA)  >  NUM THEN                                           41331700 T  0075:2
  BEGIN                                                                     41331800 T  0077:1
    MOVE(NUM,LOCN+1,[MLA[MDELTA]]);                                         41331900 T  0077:3
    MDELTA := MDELTA + NUM;                                                 41332000 T  0080:0
  END ELSE                                                                  41332100 T  0081:1
                                                                                        41331800
  BEGIN                                                                     41332200 T  0081:1
    MOVE(T1,LOCN+1,[MLA[MDELTA]]); MLA[31]:=LOGENTRY & LASTENTRY[CTF];      41332300 T  0081:3
    DISKWAIT(A, 32,MROW+(MLOG:=MLOG+1));                                    41332400 T  0085:0
    LOCN := LOCN + T1;                                                      41332500 T  0088:2
    NUM  := NUM - T1;                                                       41332600 T  0089:3
    MDELTA := 0; MOVE(31,A -2, A -1);                                       41332700 T  0091:0
    IF NUM ≠ 0 THEN GO RECYCLE;                                             41332800 T  0094:1
  END;                                                                      41332900 T  0095:2
                                                                                        41332200
  NUMAINTMESS:=NUMAINTMESS - 1;                                             41332950 T  0095:2
  IF (T1:=M[T2:=LOGHOLDER INX 1]) < 0 THEN      % SPOUT MESSAGE FOR RE-    41333000 T  0096:3
  IF (T1.[3:6] AND @76) = 4 THEN                % COVERED DISK/DRUM ERR     41333001 T  0099:3
$ SET OMIT = PACKETS                                                        41333002 T  0102:0
  BEGIN STREAM(A:=TINU[U], R:=RECS.[1:4], X:=KEY.[20:5], S:=WT.[27:6],      41333005 T  0102:0
               B:=[RECS], DSK:=T1.[8:1], D:=T1:=SPACE(10));                 41333010 T  0104:3
      BEGIN SI:=LOC A; SI:=SI+5; DS:=LIT" "; DS:=3 CHR;                     41333015 T  0109:0
            DS:=3 DEC; A:=DI; DI:=DI-3; DS:=2 FILL; DI:=A;                  41333020 T  0110:1
            DS:=14 LIT" RETRIES, MIX=";                                     41333025 T  0111:2
            DS:=2 DEC; A:=DI; DI:=DI-2; DS:=FILL; DI:=A;                    41333030 T  0113:2
            SI:=B; DS:=5 LIT", DA="; CI:=CI+DSK; GO TO DRM;                 41333033 T  0114:3
            SI:=SI+1; DS:=7 CHR; DS:=7 LIT", SEGS=";                        41333036 T  0116:3
            SI:=LOC S; DS:=2 DEC; SI:=B; SI:=SI+16; GO TO L;                41333037 T  0118:2
      DRM:  SI:=SI+11; 5(DS:=3 RESET;                                       41333039 T  0119:3
            3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB)); SI:=SI+2;       41333042 T  0120:2
      L:    DS:=4 LIT", R=";                                                41333045 T  0123:0
            16(DS:=3 RESET;                                                 41333048 T  0123:3
               3(IF SB THEN DS:=SET ELSE DS:=RESET; SKIP SB));              41333050 T  0124:1
            SI:=SI-5; DS:=5 LIT", IO=";                                     41333055 T  0126:2
            IF SB THEN DS:=2 LIT"4,"; SKIP SB;                              41333060 T  0127:3
            IF SB THEN DS:=2 LIT"3,"; SKIP SB;                              41333065 T  0129:0
            IF SB THEN DS:=2 LIT"2,"; SKIP SB;                              41333070 T  0130:1
            IF SB THEN DS:=2 LIT"1,";                                       41333075 T  0131:2
            DI:=DI-1; DS:=LIT"←";                                           41333080 T  0132:2
      END;                                                                  41333085 T  0133:1
                                                                                        41333015
      SPOUTER(T1,PSEUDOMIX[KEY.[20:5]],DISKMSG OR 34);                      41333090 T  0133:2
  END;                                                                      41333095 T  0136:2
                                                                                        41333005
```

```
  IF (T1:=M[LOGHOLDER] INX 0) = 0 THEN                                    41333100 T  0136:2
  BEGIN                                                                   41333200 T  0139:0
    IF MDELTA ≠ 0 THEN                                                    41333300 T  0139:2
    BEGIN                                                                 41333400 T  0140:1
      MLA[31] := LOGENTRY & LASTENTRY[CTF];                               41333500 T  0140:3
      DISKWAIT(A,32,MROW+MLOG+1);                                         41333600 T  0142:2
    END;                                                                  41333700 T  0144:3
                                                                                          41333400
    RECS := 5 & 62[3:42:6] & MLOG[24:33:15] & LASTENTRY[9:33:15];         41333800 T  0144:3
    WT   := 0 & (XCLOCK+P(RTR))[3:24:24];                                 41333900 T  0148:2
    WMCP := PATCHLEVEL;                                                   41334000 T  0150:3
    WLOG := LOGVERSION;                                                   41334100 T  0151:2
    WD   := DATE;                                                         41334200 T  0153:1
    DISKWAIT([RECS ] INX 0,5,MROW);                                       41334300 T  0154:0
    T1 := M[LOGHOLDER] INX 0;                                             41334400 T  0155:3
  END;                                                                    41334500 T  0157:3
                                                                                          41333200
  IF M[T2] LSS 0 THEN M[T2].[2:1] := 1 ELSE FORGETSPACE(T2);              41334600 T  0157:3
  IF T1 ≠ 0 THEN BEGIN LOGHOLDER.[CF]:=T1; GO LOGANOTHER; END;            41334700 T  0164:3
                                                                                          41334700
KILLL:                                                                    41334800 T  0167:3
  LOGHOLDER.[CF] := 0; MROW := NABS(MROW);                                41334900 T  0167:3
  IF LOGHOLDER.[9:9]=0 THEN BEGIN FORGETSPACE(A -1); MLA:=0; END;         41335000 T  0170:0
                                                                                          41335000
  KILL([MSCW]);                                                           41335100 T  0173:3
END MAINTLOGGER;                                                          41335200 T  0174:2
                                                                                          41327100
                                                                                SIZE= 0175 WORDS
```

```
                 $ SET OMIT = NOT(STATISTICS)                                                    41399999 T  0000:0
                PROCEDURE MESSAGETABLEBUILDER;                                                  41430000 T  0000:0
                                                                        START OF REL SEGMENT; DISK ADDRESS = 01033
                BEGIN                                                                           41430100 T  0000:0
                INTEGER I,I1,I2,TBL,TBLCNT;                                                     41430300 T  0000:0
STACK(F+1) = I
STACK(F+2) = I1
STACK(F+3) = I2
STACK(F+4) = TBL
STACK(F+5) = TBLCNT
                DEFINE MARKER = "********"#;                                                    41430400 T  0000:0
                LABEL L, START;                                                                 41430500 T  0000:0
                     GO TO START; P(,L);                                                        41430600 T  0000:0
                L:::                                                                            41430700 T  0002:0
                %*** BEGINNING OF OPTION RESERVED WORD TABLE ****************************       41430800 T  0002:0
                     "DRAO",    "0000",       %47%                                            41430900 T  0002:0
                     "DRBO",    "0000",       %46%                                            41431000 T  0004:0
                     "BOJO",    "0000",       %45%                                            41431100 T  0006:0
                     "EOJO",    "0000",       %44%                                            41431200 T  0008:0
                     "OPEN",    "0000",       %43%                                            41431300 T  0010:0
                     "TERM",    "NATE",       %42%                                            41431400 T  0012:0
                     "DATE",    "0000",       %41%                                            41431500 T  0014:0
                     "TIME",    "0000",       %40%                                            41431600 T  0016:0
                     "ONEB",    "REAK",       %39%                                            41431700 T  0018:0
                     "AUTO",    "PRNT",       %38%                                            41431800 T  0020:0
                     "CLEA",    "RWRS",       %37%                                            41431900 T  0022:0
                 $ SET OMIT = NOT DATACOM                                                       41432000 T  0024:0
                     "    ",    "    ",       %36%                                            41432300 T  0024:0
                 $ RESET OMIT                                                                   41432400 T  0026:0
                     "CMPL",    "FILE",       %35%                                            41432500 T  0026:0
                $ RESET OMIT
                     "CLOS",    "E000",       %34%                                            41432600 T  0028:0
                     "ERRO",    "RMSG",       %33%                                            41432700 T  0030:0
                     "RETO",    "0000",       %32%                                            41432800 T  0032:0
                     "LIBM",    "SG00",       %31%                                            41432900 T  0034:0
                     "SCHE",    "DMSG",       %30%                                            41433000 T  0036:0
                     "SECM",    "SG00",       %29%                                            41433100 T  0038:0
                     "DSKT",    "0G00",       %28%                                            41433200 T  0040:0
                     "RELT",    "0G00",       %27%                                            41433300 T  0042:0
                     "PRDR",    "EL00",       %26%                                            41433400 T  0044:0
                $ SET OMIT = NOT(DEBUGGING OR CHECKLINK)                                        41433500 T  0046:0
                          0,          0,       %25%                                            41433800 T  0046:0
                $ RESET OMIT                                                                    41433900 T  0048:0
                     "DISK",    "MSG0",       %24%                                            41434000 T  0048:0
                     "NOT ",    "USED",       %23%                                            41434100 T  0050:0
                     "LIBE",    "RR00",       %22%                                  %149-     41434200 P  0052:0
                     "PRDO",    "NLY0",       %21%                                            41434300 T  0054:0
                     "SAVE",    "PBT0",       %20%                                            41434400 T  0056:0
                     "RSMS",    "G000",       %19%                                            41434500 T  0058:0
                     "AUTO",    "UNLD",       %18%                                            41434600 T  0060:0
                          "AUTO",   "RN00",            %17%                        %902-     41434700 P  0062:0
                     "CODE",    "OLAY",       %16%                                            41434800 T  0064:0
                     "CORE",    "ST00",       %15%                                            41434900 T  0066:0
                     "DATA",    "OLAY",       %14%                                            41435000 T  0068:0
                     "HALT",    "0000",       %13%                                            41435100 T  0070:0
                     "NOT ",    "USED",       %12%                                            41435200 T  0072:0
                     "NOT ",    "USED",       %11%                                            41435300 T  0074:0
                     "NOT ",    "USED",       %10%                                            41435400 T  0076:0
```

```
      "NOT ",    "USED",       % 9%                                          41435500 T  0078:0
      "STOP",    "TEST",       % 8%                                          41435600 T  0080:0
      "PNCH",    "LOCK",       % 7%                                          41435700 T  0082:0
      "CDON",    "LYOO",       % 6%                                          41435800 T  0084:0
      "PKTO",    "NLYO",       % 5%                                          41435900 T  0086:0
      "SFPA",    "RATE",       % 4%                                          41436000 T  0088:0
      "NOT ",    "USED",       % 3%                                          41436100 T  0090:0
      "    ",    "    ",       % 2%                                          41436200 T  0092:0
      "AUTO",    "DSOO",       % 1%                                  %747-   41436300 P  0094:0
      "OPTN",    "0000",       % 0%                                          41436400 T  0096:0
      "+000",    "0000",       %STP                                         41436500 T  0098:0
      MARKER.                                                                 41436600 T  0100:0
%*** END OF OPTION RESERVED WORD TABLE **********************************    41436700 T  0101:0
%*** BEGINNING OF TERMINAL MESSAGE TABLE ********************************    41440000 T  0101:0
           0.                 % 0%                                          41440100 T  0101:0
"8STACK ", "60VRFLW",         % 1%                                          41440200 T  0102:0
"80PRTR ", "5DS-EDO",         % 3%                                          41440300 T  0104:0
"8FLAG B", "21T0000",         % 5%                                          41440400 T  0106:0
"8INVALD", "6 INDEX",         % 7%                                          41440500 T  0108:0
"8EXPON ", "60VRFLW",         % 9%                                          41440600 T  0110:0
"8INTGR ", "60VRFLW",         %11%                                         41440700 T  0112:0
"8DIV BY", "5 ZERO0",         %13%                                         41440800 T  0114:0
"8EXCESS", "5 TIMEO",         %15%                                         41440900 T  0116:0
"8INVALD", "6 ADRSS",         %17%                                         41441000 T  0118:0
"8UNEXP ", "610 ERR",         %19%                                         41441100 T  0120:0
"8DC TU ", "8NOT OU",         %21%                                         41441200 T  0122:0
"8TPUT P", "60SSBLE",                                                      41441300 T  0124:0
"8FILE U", "8NOPENE",         %25%                                         41441400 T  0126:0
"1D00000",                                                                 41441500 T  0128:0
"8INVALI", "5D EOJO",         %28%                                         41441600 T  0129:0
"8INVALI", "5D PRLO",         %30%                                         41441700 T  0131:0
"8MEMORY", "8 PARIT",         %32%                                         41441800 T  0133:0
"1Y00000",                                                                 41441900 T  0135:0
"80PRTR ", "5ES-ED.",         %35%                                         41442000 T  0136:0
"8INVALD", "8 ARRAY",         %37%                                         41442100 T  0138:0
"8 SIZE ", "3IDN...",                                                      41442200 T  0140:0
"8INVALD", "8 INPUT",         %41%                                         41442300 T  0142:0
"6 DATUM",                                                                 41442400 T  0144:0
"8TYPE M", "8ISMATC",         %44%                                         41442500 T  0145:0
"8H READ", "4STMT..",                                                      41442600 T  0147:0
"80UT OF", "5 DATA.",         %48%                                         41442700 T  0149:0
"8NON-CO", "8NFORMA",         %50%                                         41442800 T  0151:0
"8L ARRA", "2YS....",                                                      41442900 T  0153:0
"8NON-SQ", "8UARE M",         %54%                                         41443000 T  0155:0
"5ATRIX.",                                                                 41443100 T  0157:0
"8NEARLY", "8 SINGU",         %57%                                         41443200 T  0158:0
"8LAR MA", "4TRIX..",                                                      41443300 T  0160:0
"8USER D", "4S-ED..",         %61%                                         41443400 T  0162:0
"8INVALD", "8 DYNAM",         %63%                                         41443500 T  0164:0
"8IC DIA", "1L.....",                                                      41443600 T  0166:0
"8INVALD", "8 DETAC",         %67%                                         41443700 T  0168:0
"1H.....",                                                                 41443800 T  0170:0
"8PARITY", "6 ERROR",         %70%                                         41443900 T  0171:0
"8DIMENS", "8ION SI",         %72%                                         41444000 T  0173:0
"6ZE ERR",                                                                 41444100 T  0175:0
"8INVALD", "8 FILE ",         %75%                                         41444200 T  0176:0
"4NAME..",                                                                 41444300 T  0178:0
"8INVALD", "8 BLOCK",         %78%                                         41444400 T  0179:0
```

```
      "5 EXIT.",
      "8INVALI","5D COM.",      %81%
      "8FXCESS", "8 IO TI",     %83%
      "2ME....",
      "8DS-ED ", "8BY TAS",     %86%
      "8K ANCE", "4STOR..",
      "8FS-ED ", "8BY TAS",     %90%
      "8K ANCE", "4STOR..",
      "8INVALI", "8D TASK",     %94%
      "8 INITI", "5ATION.",
      "8INVALI", "8D TASK",     %98%
      "8 CONTI", "8NUATIO",
      "1N.....",
      "8SOFTWA", "8RE INT",     %103%
      "8FRRUPT", "8 QUFUE",
      "6 OVFLW",
      "8INVALD", "8 LINKE",     %108%
      "6D TAPE",
      "8ARRAY ", "8OLAY S",     % 111                              %517-
      "8PACE U", "6SED UP",     %                                  %517-
            0,                  %STP%
      MARKER,
%*** END OF TERMINAL MESSAGE TABLE ************************************
%*** BEGINNING OF KEYIN MESSAGE TABLE **********************************
      COMMENT
      KEYIN MESSAGE TABLE ENTRIES -
      EACH TABLE WORD IS CONFIGURED AS FOLLOWS:
      [ 6:6 ] = - MIX OR INFO CODE -
                0 = INFO MESSAGE ONLY
                1 = MIX OR INFO MESSAGE
                2 = MIX MESSAGE ONLY
      [12:12] = TWO LETTER KEYBOARD MESSAGE
      [24:6 ] = - KEYIN PROCEDURE TO BE CALLED -
                0 = PROCEDURE KEYIN0 ( DIRECT CALL )
                1 = PROCEDURE KEYIN1 ( DIRECT CALL )
                2 = PROCEDURE KEYIN2 ( INDEPENDENT RUNNER )
      [33:1 ] = 1 FOR ALLOWABLE STANDARD RJE REQUESTS
      [34:2 ] = - MIXCODE ( FOR MIX MESSAGES ) -
                1 = JOB SHOULD BE WAITING FOR THIS INPUT
                2 = JOB SHOULD BE RUNNING, BUT NOT NECESSARILY
                    WAITING
                3 = JOB NEED NOT BE RUNNING
      [36:12] = LABEL NUMBER ( SWITCH LOCATION IN PROCEDURE)
      END OF COMMENT;
      "2AX0501",                %AX% INPUT TO JOB FROM SPO
      "2IL0102",                %IL% INPUT FILE WITH LABEL SPECIFIED
      "2UL0103",                %UL% INPUT FILE WITH UNKNOWN LABEL
      "0QT0004",                %QT% QUIT PROCESSING PRINTER-BACK UP
      "2QT0604",                %QT% QUIT PROCESSING PRINTER-BACK UP
      "2OU0105",                %OU% OUPUT TO SPECIFIED UNIT
      "0WY0006",                %WY% SYSTEM INQUIRY
      "2WY0506",                %WY% SYSTEM INQUIRY
      "0RY0007",                %RY% READY PERIPHERAL UNIT OR SYSTEM
      "0DS0008",                %DS% TERMINATE JOB
      "2DS0608",                %DS% TERMINATE JOB
      "2SD0209",                %SD% TERMINATE JOB WITHOUT REMOVING DECK
      "0TF0410",                %TF% TYPE CORE FACTOR
```

```
41444500 T  0181:0
41444600 T  0182:0
41444700 T  0184:0
41444800 T  0186:0
41444900 T  0187:0
41445000 T  0189:0
41445100 T  0191:0
41445200 T  0193:0
41445300 T  0195:0
41445400 T  0197:0
41445500 T  0199:0
41445600 T  0201:0
41445700 T  0203:0
41445800 T  0204:0
41445900 T  0206:0
41446000 T  0208:0
41446100 T  0209:0
41446200 T  0211:0
41446300 C  0212:0
41446400 C  0214:0
41449700 T  0216:0
41449800 T  0217:0
41449900 T  0218:0
41450000 T  0218:0
41450100 T  0218:0
41450200 T  0218:0
41450300 T  0218:0
41450400 T  0218:0
41450500 T  0218:0
41450600 T  0218:0
41450700 T  0218:0
41450800 T  0218:0
41450900 T  0218:0
41451000 T  0218:0
41451100 T  0218:0
41451200 T  0218:0
41451300 T  0218:0
41451400 T  0218:0
41451500 T  0218:0
41451600 T  0218:0
41451700 T  0218:0
41451800 T  0218:0
41451900 T  0218:0
41452000 T  0218:0
41452100 T  0218:0
41452200 T  0219:0
41452300 T  0220:0
41452400 T  0221:0
41452500 T  0222:0
41452600 T  0223:0
41452700 T  0224:0
41452800 T  0225:0
41452900 T  0226:0
41453000 T  0227:0
41453100 T  0228:0
41453200 T  0229:0
41453300 T  0230:0
```

```
    "0SF0011",              %SF% SET CORE FACTOR                                  41453400 T  0231:0
    "2RM0512",              %RM% REMOVE DUP FILE                                  41453500 T  0232:0
$ SET OMIT = NOT(DUMP OR DEBUGGING)                                               41453600 T  0233:0
    "0DP0013",              %DP% CORE DUMP                                        41453700 T  0233:0
$ SET OMIT = DUMP OR DEBUGGING                                                    41453800 T  0234:0
    "0DD7014",              %DD% DISK DUMP                                        41454500 T  0234:0
    "0DB7015",              %DB% DISK BUG                                         41454600 T  0235:0
    "0PT7016",              %PT% PRINT TRACE                                      41454700 T  0236:0
$ RESET OMIT                                                                      41454800 T  0237:0
    "2ST0617",              %ST% STOP JOB                                         41454900 T  0237:0
    "0CM0018",              %CM% CHANGE MCP                                       41455000 T  0238:0
    "0SV0019",              %SV% SAVE PERIPHERAL UNIT                             41455100 T  0239:0
    "0CL0020",              %CL% CLEAR PERIPHERAL UNIT OR SYSTEM                  41455200 T  0240:0
    "1BK0721",              %BK% BREAK                                            41455300 T  0241:0
    "20K0522",              %OK% CONTINUE PROCESSING JOB                          41455400 T  0242:0
    "2FM0123",              %FM% FORMS READY                                      41455500 T  0243:0
    "2FR0124",              %FR% FINAL REEL (COBOL)                               41455600 T  0244:0
    "20F0125",              %OF% OPTIONAL FILE=COBOL, OK FILE=LIBMAIN              41455700 T  0245:0
    "2TI0626",              %TI% PRINT TIME FOR JOB                               41455800 T  0246:0
    "2PR0227",              %PR% PRINT PRIORITY OF JOB                            41455900 T  0247:0
    "0R00028",              %RO% RESET OPTION BIT                                 41456000 T  0248:0
    "0S00029",              %SO% SET OPTION BIT                                   41456100 T  0249:0
    "2IT0230",              %IT% MAINTENANCE INTERRUPT                            41456200 T  0250:0
    "0WI0431",              %WI% WHAT INTRINSIC                                   41456300 T  0251:0
    "2IF0532",              %IF% IGNORE IN=USE FILE                               41456400 T  0252:0
    "0RC0033",              %RC% REEL CHANGE ON WRITE                             41456500 T  0253:0
    "1**77**",              %**% END OF FIRST KEYIN PROCEDURE CALLS               41459900 T  0254:0
$ SET OMIT = NOT(DATACOM AND DCSPO)                                               41460000 T  0255:0
    "0BO7001",              %BO% BLACK OUT                                        41461500 T  0255:0
    "0LI7002",              %LI% LOG IN                                           41461600 T  0256:0
    "0LO7403",              %LO% LOG OUT                                          41461700 T  0257:0
    "0ZZ7004",              %ZZ% SENSE EOT                                        41461800 T  0258:0
    "0TC7005",              %TC% TIME AND CHARGES FOR REMOTE STATION               41461900 T  0259:0
    "0HM7006",              %HM% HALT MESSAGES                                    41462000 T  0260:0
    "2HR7207",              %HR% HALT MESSAGES FOR JOB                            41462100 T  0261:0
    "0SS7408",              %SS% STATION TO STATION MESSAGE                       41462200 T  0262:0
    "2SS7208",              %SS% STATION TO STATION MESSAGE                       41462300 T  0263:0
    "0BS7009",              %BS% SET BACK UP SPO                                  41462400 T  0264:0
    "0US7010",              %US% RESET BACK UP SPO                                41462500 T  0265:0
    "0SC7011",              %SC% PRINT SPO CONSOLES                               41462600 T  0266:0
    "0QV7012",              %QV% SET REMOTE TIME OUT VALUE                        41462700 T  0267:0
$ SET OMIT = NOT DATACOM                                                          41462800 T  0268:0
    "0RR7013",              %RR% RESET REMOTE AS NON=SPO                          41463100 T  0268:0
$ SET OMIT = NOT AUXMEM                                                           41463200 T  0269:0
    "0LA7014",              %LA% LIST AUXMEM FILES                                41463600 T  0269:0
    "0CA7015",              %CA% CHANGE AUXMEM FILES                              41463700 T  0270:0
$ RESET OMIT                                                                      41463800 T  0271:0
    "0DT1016",              %DT% CHANGE DATE                                      41463900 T  0271:0
    "0WD1417",              %WD% WHAT DATE                                        41464000 T  0272:0
    "0TR1018",              %TR% SET TIME                                         41464100 T  0273:0
    "0WT1419",              %WT% WHAT TIME                                        41464200 T  0274:0
    "0WM1420",              %WM% WHAT MCP                                         41464300 T  0275:0
    "0CC1421",              %CC% CONTROL CARD (SEE 16043680 FOR QMARK)            41464400 T  0276:0
    "0OL1022",              %OL% PRINT OUTPUT LABEL                               41464500 T  0277:0
    "0PB1423",              %PB% START PRINTER BACK=UP                            41464600 T  0278:0
    "0RN1024",              %RN% SET PSEUDO READERS                               41464700 T  0279:0
    "0LD1025",              %LD% START LOAD CONTROL                               41464800 T  0280:0
```

```
    "0RD1026",              %RD% REMOVE PSEUDO DECK                    41464900 T  028100
$ SET OMIT = NOT PACKETS                                               41465000 T  028200
    "0RP1427",              %RP% REMOVE PACKET                         41465100 T  028200
$ SET OMIT = PACKETS                                                   41465200 T  028300
    "0FD1028",              %ED% END PSEUDO DECK                       41465500 T  028300
$ SET OMIT = NOT STATISTICS                                            41465600 T  028400
    "0SI7029",              %SI% SET STATISTICS INTERVAL               41465900 T  028400
$ SET OMIT = NOT(DATACOM AND DCLOG)                                    41466000 T  028500
    "0LR7030",              %LR% SET REMOTE LOG                        41466300 T  028500
$ RESET OMIT                                                           41466400 T  028600
    "1OT1631",              %OT% PRINT PRT CELL OR CORE LOCATION VALUE 41466500 P  028600
    "2IN1632",              %IN% SET VALUE OF PRT CELL                 41466600 T  028700
    "0FE1033",              %FE% ENTER MAINT. LOG COMMENT              41466700 T  028800
    "1OC1234",              %OC% ENTER OPERATOR COMMENT IN LOG         41466800 T  028900
    "0SQ1035",              %SQ% DISK SQUASH                           41466900 T  029000
$ SET OMIT = NOT SEPTICTANK                                            41467000 T  029100
    "0CS7036",              %CS% CREATE SEPTIC TANK                    41467400 T  029100
    "0HS7037",              %HS% HALT SEPTIC TANK                      41467500 T  029200
$ RESET OMIT                                                           41467600 T  029300
$ SET OMIT = NOT(WORKSET)                                              41467700 T  029300
    "0WK1338",              %WK% WORKSET REQUESTS                      41467800 T  029300
$ POP OMIT                                                             41467900 T  029400
$ SET OMIT = WORKSET                                                   41468000 T  029400
    "1**77**",              %**% END OF SECOND KEYIN PROCEDURES        41469900 T  029400
$ SET OMIT = NOT(DATACOM AND DCSPO)                                    41470000 T  029500
    "1WU7201",              %WU% WHAT (REMOTE) USERS                   41470500 T  029500
    "0WP7002",              %WP% WHAT PROGRAMS ATTACHED TO REMOTES     41470600 T  029600
    "2WA7202",              %WA% WHAT (REMOTES) ATTACHED TO JOB        41470700 T  029700
$ SET OMIT = NOT(DATACOM AND DCSPO AND DCLOG)                          41470800 T  029800
    "0WR7003",              %WR% WHAT REMOTE LOG                       41471100 T  029800
$ RESET OMIT                                                           41471200 T  029900
    "0MX2404",              %MX% LIST JOBS IN MIX                      41471300 T  029900
    "1TS2305",              %TS% TYPE SCHEDULE                         41471400 T  030000
    "2PS2306",              %PS% CHANGE PRIORITY OF JOB IN SCHEDULE    41471500 T  030100
    "2FS2707",              %ES% REMOVE JOB FROM SCHEDULE              41471600 T  030200
    "2XS2308",              %XS% FORCE SELECTION FROM SCHEDULE         41471700 T  030300
    "0LF2409",              %LF% LIST FILES FOR USER                   41471800 T  030400
    "0LC2410",              %LC% LIST FILES FOR CREATOR                41471900 T  030500
    "0LS2411",              %LS% LIST FILES FOR SECURITY               41472000 T  030600
    "0FX2412",              %EX% LIST FILES EXPIRED                    41472100 T  030700
    "0PD2413",              %PD% PRINT DIRECTORY                       41472200 T  030800
$ SET OMIT = NOT(DATACOM AND DCSPO)                                    41472300 T  030900
    "1SM7214",              %SM% START MIX MESSAGES                    41472600 T  030900
$ RESET OMIT                                                           41472700 T  031000
    "0TO2415",              %TO% TYPE OPTIONS                          41472800 T  031000
    "0PO2416",              %PO% PRINT SPECIFIED OPTION                41472900 T  031100
    "0PG2017",              %PG% PURGE TAPE UNIT                       41473000 T  031200
$ SET OMIT = NOT AUXMEM                                                41473100 T  031300
    "1AU7418",              %AU% PRINT AUXMEM IN USE                   41473300 T  031300
$ POP OMIT OMIT                                                        41473350 T  031400
$ SET OMIT = NOT MONITOR                                               41473400 T  031400
    "0MS7019",              %MS% SET/RESET SYSTEM MONITOR              41473600 T  031400
$ POP OMIT OMIT                                                        41473700 T  031500
    "0LN2020",              %LN% START LOG                             41473800 T  031500
    "0CD2421",              %CD% PRINT PSEUDO DECKS ON DISK            41473900 T  031600
$ SET OMIT = NOT PACKETS                                               41474000 T  031700
    "0PP2422",              %PP% PRINT PACKETS                         41474100 T  031700
```

```
    "0PC2423",              %PC% PACKET COUNT                                41474200 T  0318:0
$ SET OMIT = PACKETS                                                         41474300 T  0319:0
    "1CU2624",              %CU% PRINT CORE USAGE                            41474700 T  0319:0
$ SET OMIT = NOT STATISTICS                                                  41474800 T  0320:0
    "0SY7025",              %SY% SET STATISTICS FILES                        41475200 T  0320:0
    "0SL7026",              %SL% SET STATISTICS FILES                        41475300 T  0321:0
$ RESET OMIT                                                                 41475400 T  0322:0
    "0RW2027",              %RW% REWIND TAPE UNIT                            41475500 T  0322:0
    "0CI2028",              %CI% CHANGE INTRINSIC FILES                      41475600 T  0323:0
    "2CT2629",              %CT% CHANGE TIME LIMITS                          41475700 T  0324:0
    "2XT2630",              %XT% EXTEND TIME LIMITS                          41475800 T  0325:0
    "2TL2631",              %TL% PRINT TIME LIMITS                           41475900 T  0326:0
    "0XD2032",              %XD% CREATE BAD-DISK AREA                        41476000 T  0327:0
    "0MR2033",              %MR% MAKE RESERVE DISK                           41476100 T  0328:0
    "0MC2034",              %MC% MAKE COMPILER                               41476200 T  0329:0
$ SET OMIT = NOT BREAKOUT                                                    41476300 T  0330:0
    "0RS7035",              %RS% RE-START AFTER BREAKOUT                     41476600 T  0330:0
$ RESET OMIT                                                                 41476700 T  0331:0
    "0HD2036",              %HD% HOW MUCH (AVAILABLE) DISK                   41476800 T  0331:0
    "2SA2637",              %SA% SEG & REL ADDR OF RUNNING PROGRAM           41476900 P  0332:0
$ SET OMIT = NOT(BREAKOUT)                                      %139-        41477000 C  0333:0
    "1EI7638",              %EI% BREAKOUT FROM SPO                %139-      41477300 C  0333:0
$ POP OMIT OMIT                                                 %139-        41477400 C  0334:0
    "1++0000",              %++% END OF TABLE                                41479700 T  0334:0
    MARKER,                                                                  41479800 T  0335:0
%*** END OF KEYIN MESSAGE TABLE ************************************         41479900 T  0336:0
%*** BEGINNING OF CC RESERVED WORD TABLE ****************************       41480000 T  0336:0
    "UNLOCK ",      21 ,                                                     41480100 T  0336:0
    "USE    ",      22 ,                                                     41480200 T  0338:0
    "LOCK   ",      23 ,                                                     41480300 T  0340:0
    "FREE   ",      24 ,                                                     41480400 T  0342:0
    "PUBLIC ",      25 ,                                                     41480500 T  0344:0
    "PACKET ",      26 ,                                                     41480700 T  0346:0
    "USER   ",      27 ,                                                     41480900 T  0348:0
    "RUN    ",      28 ,                                                     41481000 T  0350:0
    "R      ",      28 ,                                                     41481100 T  0352:0
    "COMPILE",      29 ,                                                     41481200 T  0354:0
    "C      ",      29 ,                                                     41481300 T  0356:0
    "EXECUTE",      30 ,                                                     41481400 T  0358:0
    "EX     ",      30 ,                                                     41481500 T  0360:0
    "COPY   ",      31 ,                                                     41481550 T  0362:0
    "DUMP   ",      32 ,                                                     41481600 T  0364:0
    "UNLOAD ",      33 ,                                                     41481700 T  0366:0
    "ADD    ",      34 ,                                                     41481800 T  0368:0
    "LOAD   ",      35 ,                                                     41481900 T  0370:0
    "REMOVE ",      36 ,                                                     41482000 T  0372:0
    "CHANGE ",      37 ,                                                     41482100 T  0374:0
    "UNIT   ",      38 ,                                                     41482200 T  0376:0
    "PACKEND",      39 ,                                                     41482400 T  0378:0
    "END    ",      39 ,                                                     41482600 T  0380:0
$ SET OMIT = NOT PACKETS                                                     41482700 T  0382:0
    "WAIT   ",      40 ,                                                     41482800 T  0382:0
$ POP OMIT                                                                   41482900 T  0384:0
    "DATA   ",      41 ,                                                     41483000 T  0384:0
    "DATA029",      41 ,                                        %890-        41483010 C  0386:0
    "LABEL  ",      42 ,                                                     41483100 T  0388:0
    "SET    ",      43 ,                                                     41483200 T  0390:0
```

```
                "RESET  ",      44 ,                                                    41483300 T  0392:0
                "FILE   ",      47 ,                                                    41483400 T  0394:0
                "EXPIRED",      48 ,                                                    41483500 T  0396:0
                "ACCESSD",      49 ,                                                    41483600 T  0398:0
                "PROCESS",      50 ,    % A STORE NEAR THE END OF PCC                   41483700 T  0400:0
                "IO     ",      51 ,    % MAKES USE OF THE ORDER AND VALUES             41483800 T  0402:0
                "PRIORIT",      52 ,    % OF "PROCESS" THRU "SAVE".                     41483900 T  0404:0
                "COMMON ",      53 ,                                                    41484000 T  0406:0
                "CORE   ",      54 ,                                                    41484100 T  0408:0
                "STACK  ",      55 ,                                                    41484200 T  0410:0
                "SAVE   ",      56 ,                                                    41484300 T  0412:0
                "ALGOL  ",      60 ,                                                    41484400 T  0414:0
                "XALGOL ",      61 ,                                                    41484500 T  0416:0
                "FORTRAN",      62 ,                                                    41484600 T  0418:0
                "TSPOL  ",      63 ,                                                    41484700 T  0420:0
                "BASIC  ",      64 ,                                                    41484800 T  0422:0
                "COBOL68",      65 ,                                                    41484900 T  0424:0
                "WITH   ",      66 ,                                                    41485000 T  0426:0
                "COBOL  ",      67 ,                                                    41485100 T  0428:0
                "LIBRARY",      68 ,                                                    41485200 T  0430:0
                "SYNTAX ",      69 ,                                                    41485300 T  0432:0
                "FROM   ",      70 ,                                                    41485400 T  0434:0
                "TO     ",      71 ,                                                    41485500 T  0436:0
                "ON     ",      72 ,                                    %148-           41485510 C  0438:0
                "FORM   ",       75 ,       % SWITCH D(PCC)          %846-           41485600 P  0440:0
              "RANDOM ",       78 ,                                    %603-           41485610 C  0442:0
             "LINES66",       77 ,                                    %724-           41485620 C  0444:0
                "DUMMY  ",        76 ,                               %846-           41485630 C  0446:0
                "NO     ",      79 ,    % "FORM"-"SPECIAL"                           41485700 T  0448:0
                "DISK   ",      80 ,                                                    41485800 T  0450:0
                "TAPE   ",      81 ,                                                    41485900 T  0452:0
                "PUNCH  ",      82 ,                                                    41486000 T  0454:0
                "PRINT  ",      83 ,                                                    41486100 T  0456:0
                "BACK   ",      85 ,                                                    41486200 T  0458:0
                "SPECIAL",      90 ,                                                    41486300 T  0460:0
                "REMOTE ",      89 ,                                                    41486400 T  0462:0
                "SERIAL ",      86 ,                                                    41486500 T  0464:0
                "UPDATE ",      87 ,                                                    41486600 T  0466:0
                "SPO    ",      88 ,                                                    41486700 T  0468:0
                "PAPER  ",      84 ,                                                    41486800 T  0470:0
                "EU     ",      91 ,                                                    41486900 T  0472:0
                "SLOW   ",      92 ,                                                    41487000 T  0474:0
                "B6500  ",      93 ,                                                    41487100 T  0476:0
                "FAST   ",      94 ,                                                    41487200 T  0478:0
                "MAXIMUM",      96 ,                                                    41487400 T  0480:0
                "FREEF  ",      97 ,                                                    41487500 T  0482:0
                "FIXED  ",      98 ,                                                    41487600 T  0484:0
                "PROTECT",      99 ,                                                    41487700 T  0486:0
                "SENSITI",     100 ,                                                    41487800 T  0488:0
                "LATEST ",     101 ,                                                    41487900 T  0490:0
                "EXCEPT ",     102 ,                                                    41488000 T  0492:0
                "AS     ",     103 ,                                                    41488100 T  0494:0
                "NOHASH ",     104 ,                                                    41488200 T  0496:0
                "CC     ",      14 ,    % CC MUST EQUAL QUEST %                         41488900 T  0498:0
                      0,         0 ,                                                    41489000 T  0500:0
                MARKER,                                                                 41489100 T  0502:0
%*** END OF CC RESERVED WORD TABLE ************************************              41489200 T  0503:0
```

```
%*** BEGINNING OF LBMESS MESSAGE TABLE *************************          41490000 T  0503:0
     "←        ", % 0                                                       41490100 T  0503:0
     "LOADED ","←          ", % 1                                           41490200 T  0504:0
     "DUMPED ","←          ", % 3                                           41490300 T  0506:0
     "CHANGED"," ←         ", % 5                                           41490400 T  0508:0
     "REMOVED"," ←         ", % 7                                           41490500 T  0510:0
     "MC-ED ←", % 9                                                         41490600 T  0512:0
     "FIXED ←", % 10                                                        41490700 T  0513:0
     "RESET ←", % 11                                                        41490800 T  0514:0
     "SET ←  ", % 12                                                        41490900 T  0515:0
     "ACCESSE","D←         ", % 13                                          41491000 T  0516:0
     "NOT ON ","DISK←  ", % 15                                              41491100 T  0518:0
     "NOT ON ","TAPE←  ", % 17                                              41491200 T  0520:0
     "NOT EXE","CUTABLE"," CODE← ", % 19                                    41491300 T  0522:0
     "NOT A C","OMPILER","←         ", % 22                                 41491400 T  0525:0
     "SYSTEM ","FILE←  ", % 25                                              41491500 T  0528:0
     "TAPE PA","RITY←  ", % 27                                              41491600 T  0530:0
     "DUP FIL","E←     ", % 29                                              41491700 T  0532:0
     "NO USER"," DISK← ", % 31                                              41491800 T  0534:0
     "UNEXPED"," EOF←  ", % 33                                              41491900 T  0536:0
     "DISK PA","RITY←  ", % 35                                              41492000 T  0538:0
     "BAD NAM","E←     ", % 37                                              41492100 T  0540:0
     "INV REC"," SIZE← ", % 39                                              41492200 T  0542:0
     "INVALID"," USER← ", % 41                                              41492300 T  0544:0
     "BAD HEA","DER←   ", % 43                                              41492400 T  0546:0
     "IN USE←", % 45                                                        41492500 T  0548:0
     "ADDED ←", % 46                                                        41492600 T  0549:0
     ",TAPE P","OSITION","ED←     ", % 47                                   41492650 T  0550:0
     "AUTO-ZI","PPED←  ", % 50                                              41492700 T  0553:0
     "CHANGED"," TO ←  ", % 52                                              41493010 T  0555:0
     "MC-ED T","O ←    ", % 54                                              41493020 T  0557:0
     "EXTRA R","ECORDS←", % 56                                              41493030 T  0559:0
     "DUP LIB","RS←    ", % 58                                              41493040 T  0561:0
     "SENSITI","VE←    ", % 60                                              41493050 T  0563:0
     "BEING B","LANKED←", % 62                                              41493060 T  0565:0
     "NOT LAT","EST VER","SION←  ", % 64                                    41493070 T  0567:0
     "COPIED←",  % 67                                                       41493080 T  0570:0
     "ON DISK","←      ", % 68                                  %160-       41493085 C  0571:0
     MARKER;                                                                41493100 T  0573:0
%*** END OF LBMESS MESSAGE TABLE *******************************           41493200 T  0574:0
%*** END OF RESERVED WORD AND MESSAGE TABLES ***************************    41500000 T  0574:0
START:                                                                      41500100 T  0574:0
     TBL:=I2:=M[P(..MESSAGETABLEBUILDER)].[CF]+2;                           41500200 T  0574:0
     WHILE M[TBL:=TBL+1]≠MARKER DO; % SEARCH FOR END OF OPTION TBLE         41500300 T  0577:0
     I1:=TBL; TBL:=TBL+1;                                                   41500400 T  0582:0
     FOR I:=2 STEP 1 UNTIL MESSAGETABLESIZE DO                              41500500 T  0584:0
     WHILE M[TBL:=TBL+1] ≠ MARKER DO;                                       41500600 T  0585:0
     I:=I1-I2; I1:=(TBL+2)-I1;                                              41500700 T  0592:1
     STREAM(A:=I DIV 60,B:=(I:=(I MOD 60)),C:=I1 DIV 60,                    41500800 T  0595:1
            D:=(I1:=(I1 MOD 60)),E:=I2);                                    41500900 T  0598:1
     BEGIN                                                                  41501000 T  0600:0
          SI:=E; DI:=E;                                                     41501100 T  0600:0
          A(60(SI:=SI+4; DS:=4 CHR));                                       41501200 T  0600:2
          B(SI:=SI+4; DS:=4 CHR);                                           41501300 T  0602:1
          C(DS:=60 WDS);                                                    41501400 T  0603:2
          D(DS:=WDS);                                                       41501500 T  0604:2
     END;                                                                   41501600 T  0605:2
                                                                                  41501000
```

```
      TBL:=I2;                                                                                  41501700 T  0605:3
      FOR TBLCNT:=0 STEP 1 UNTIL (MESSAGETABLESIZE-1) DO                                        41501800 T  0606:2
      BEGIN                                                                                     41501900 T  0610:3
           WHILE M[TBL:=TBL+1]≠MARKER DO; I:=TBL-I2;                                            41502000 T  0610:3
           MESSAGETABLE[TBLCNT]:=GETUSERDISK((I+29) DIV 30)&I[8:38:10];                         41502100 T  0617:1
           DISKWAIT(I2,I,MESSAGETABLE[TBLCNT],[22:26]);                                         41502300 T  0621:1
           I2:=TBL:=TBL+1;                                                                      41502400 T  0623:1
      END;                                                                                      41502500 T  0625:0
                                                                                                                  41501900
END BUILDING TABLES;                                                                            41502600 T  0625:2
                                                                                                                  41430100
                                                                                                          SIZE= 0626 WORDS
```

```
                    PROCEDURE ENTERSYSFILE(N); VALUE N; REAL N;                                41600000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 01054
                    %                                                                          41600100 T  0000:0
                    BEGIN                                                                      41600200 T  0000:0
                         REAL A,J,WC,MFID,DISK;                                                41600300 T  0000:0
STACK(F+1) = A
STACK(F+2) = J
STACK(F+3) = WC
STACK(F+4) = MFID
STACK(F+5) = DISK
                         ARRAY DDD[*];                                                         41600400 T  0000:0
STACK(F+6) = DDD
                         LABEL RETURN,EXIT;                                                    41600500 T  0000:0
                    %                                                                          41600600 T  0000:0
                         IF N=1 THEN                                                           41600700 T  0000:0
                         BEGIN                                                                 41600800 T  0002:1
                              MFID := "LIBMAIN"; J := 1;                                       41600900 T  0002:3
                         END ELSE                                                              41601000 T  0004:1
                                                                                                          41600800
                         IF N=2 THEN                                                           41601100 T  0004:1
                         BEGIN                                                                 41601200 T  0006:3
                              MFID := "LDCNTRL";                                               41601300 T  0007:1
                         END ELSE                                                              41601400 T  0008:0
                                                                                                          41601200
                         IF N=3 THEN                                                           41601500 T  0008:0
                         BEGIN                                                                 41601600 T  0010:3
                              MFID := "PRNPBT ";                                               41601700 T  0011:1
                         END ELSE                                                              41601800 T  0012:0
                                                                                                          41601600
                         GO EXIT;                                                              41601900 T  0012:0
                    %                                                                          41602000 T  0012:0
                         DISK := "DISK    ";                                                   41602100 T  0012:0
                         IF (A:=DIRECTORYSEARCH(MFID,DISK,5)) # 0 THEN                         41602200 T  0012:3
                         BEGIN                                                                 41602300 T  0015:0
                              M[A INX 2] := MCP;                                               41602400 T  0015:2
                              M[A INX 5] := M[A INX 6] := @14;                                 41602500 T  0018:1
                              DISKWAIT(A,[CF],30,A,[FF]);                                      41602600 T  0022:0
                              GO RETURN;                                                       41602700 T  0024:1
                         END;                                                                  41602800 T  0027:0
                                                                                                          41602300
                         DDD := [M[A := SPACE(WC := 181+30xJ)]]&WC[8:38:10];                   41602900 T  0027:0
                         MOVE(WC,A-1,A);                                                       41603000 T  0032:3
                         STREAM(DATE,D:=A+3);                                                  41603100 T  0034:3
                         BEGIN                                                                 41603200 T  0036:1
                              SI:=LOC DATE; DS:=8 OCT;                                         41603300 T  0036:1
                              DI:=D; DS:=2 LIT"+#";                                            41603400 T  0036:3
                              SI:=D; SI:=SI+5; DS:=3 CHR;                                      41603500 T  0037:2
                         END;                                                                  41603600 T  0038:1
                                                                                                          41603200
                         DDD[ 0] := @3600036000101;                                            41603700 T  0038:2
                         DDD[ 1] := (XCLOCK+P(RTR))&DDD[3][6:30:18];                           41603800 T  0039:3
                         DDD[ 2] := MCP;                                                       41603900 T  0042:3
                         DDD[ 4],[9:2] := 3;                                                   41604000 T  0044:3
                         DDD[ 5] := DDD[6] := @14;                                             41604100 T  0047:1
                         DDD[ 7] := 4+J;                                                       41604200 T  0049:2
                         DDD[ 9] := 1;                                                         41604300 T  0051:1
                         DDD[10] := PETUSERDISK((DDD[8] := 5+J)&1[2:47:1],1);                  41604400 T  0052:2
```

```
DDD[31] := 3-J;                                                                  41604500 T  0057:0
DDD[32] := DDD[38] := 2;                                                         41604600 T  0058:3
DDD[33] := 4-J;                                                                  41604700 T  0061:0
DDD[34] := 22;                                                                   41604800 T  0062:3
DDD[35] := 2+J+J;                                                                41604900 T  0064:0
DDD[36] := 6;                                                                    41605000 T  0066:1
DDD[37] := IF J THEN -1 ELSE 1;                                                  41605100 T  0067:2
DDD[47] := DDD[48] := @377777777777;              % TIME LMT                      41605200 T  0070:2
DDD[49] := IF J THEN 2 ELSE 0; %                  % PRIORITY      %711-           41605300 P  0072:3
DDD[51] := IF J THEN 64 ELSE 4;                   % CORE EST                      41605400 T  0075:2
DDD[52] := IF J THEN 200 ELSE 150;                % STACKSIZ                      41605500 T  0078:1
DDD[61] := @0000012600001011                                                     41605600 T  0081:0
          &(IF J THEN 35 ELSE IF N=2 THEN 23 ELSE 19)[24:38:10];                 41605700 T  0081:3
DDD[62] := @0024101100000000;                                                    41605800 T  0086:3
DDD[122-30*J] := @0000220000200001;                                              41605900 T  0088:0
DDD[169-30*J] := FLAG(@2740010000100000);                                        41606000 T  0090:1
IF NOT J THEN                                                                    41606100 T  0092:3
STREAM(C:=N=2, D:=[DDD[91]]);                                                    41606200 T  0093:1
BEGIN                                                                            41606300 T  0095:2
     CI:=CI+C; GO L1;                                                            41606400 T  0095:2
     DS:=40 LIT                                                                  41606500 T  0096:1
         "012CONTROLDECK   1A022BACK-UPOF DECK1B00";                             41606600 T  0096:2
     GO L2;                                                                      41606700 T  0101:2
L1:  DS:=40 LIT                                                                  41606800 T  0101:3
         "012PRINTERBACK-UP1A0220000000PRINTER1B00";                             41606900 T  0102:0
L2:                                                                              41607000 T  0107:0
END;                                                                             41607100 T  0107:0
                                                                                                41606300
ENTERUSERFILE(MFID,DISK,A-1);                                                    41607200 T  0107:1
DISKWAIT(A+31,WC-31,DDD[10]);                                                    41607300 T  0109:1
RETURN:                                                                          41607400 T  0111:3
     FORGETSPACE(A);                                                             41607500 T  0111:3
EXIT:                                                                            41607600 T  0112:2
END ENTERSYSFILE;                                                                41607700 T  0112:2
                                                                                                41600200
                                                                                 SIZE= 0119 WORDS
```

```
                    COMMENT ARTN RETURNS ALL STORAGE FOR AN N-DIMENSIONAL ARRAY A;%                  42473000 T  0000:0
                    PROCEDURE ARTN(A,N); VALUE A,N; ARRAY A[*]; INTEGER N;%                         42474000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 01058
                              BEGIN INTEGER I;%                                                     42475000 T  0000:0
STACK(F+1) = I
                                    IF NOT STOREDY THEN SLEEP([TOGLE],STOREMASK);                   42476000 T  0000:0
                                    IF A.[18:15]≠0 THEN A←M[A.[18:15]];                             42476100 T  0003:1
                                    IF N>1 THEN DO ARTN(A[I],N-1) UNTIL (I←I+1)≥A.SIZE;             42477000 T  0007:2
                                              N←A INX 0;                                            42478000 T  0013:2
                                    IF A.PBIT THEN                                                  42478200 T  0015:0
                                              BEGIN I←M[N-1].[FF];                                  42478400 T  0016:0
                                                   FORGETSPACE(N)                                   42478600 T  0019:0
                                              END ELSE I←N;                                         42478800 T  0019:1
                                                                                                                42478400
                                    IF I>511 THEN DISKRTN(I, A.SIZE);                               42479000 T  0021:0
                              END ARTN;%                                                            42480000 T  0024:0
                                                                                                                42475000
                                                                                                  SIZE= 0025 WORDS
```

```
                COMMENT ASR IS THE ALGOL STORAGE RETURN COMMUNICATE;%                                  42481000 T  0000:0
                PROCEDURE ASR; BEGIN INTEGER I,BCNTR; ARRAY AIT[*]; REAL TEMP;%                        42482000 T  0000:0
                                                                    START OF REL SEGMENT; DISK ADDRESS = 01059
STACK(F+1) = I
STACK(F+2) = BCNTR
STACK(F+3) = AIT
STACK(F+4) = TEMP
                        LABEL L,L1;                                                                    42483000 T  0000:0
                         REAL MOTHER; ARRAY DESC[*];%                                                  42484000 T  0000:0
STACK(F+5) = MOTHER
STACK(F+6) = DESC
                         WHILE (AIT←PRT[P1MIX,AITNDX]).PBIT=0 DO%                                      42485000 T  0000:0
                               MAKEPRESENT([PRT[P1MIX,AITNDX]] INX 0);%                                42486000 T  0004:2
                        MEMORY[AIT INX NOT 1],[2:1]←1;%                                                42487000 T  0007:0
                        I:=AIT[0]+1;                                                                   42488000 T  0010:3
                        IF (BCNTR:=PRT[P1MIX,CURBLKCNTR]) LEQ 0 THEN                                   42488100 T  0012:1
                        BEGIN TERMINATE(P1MIX);                                                        42488200 T  0014:1
                              TERMINALMESSAGE(78);                                                     42488300 T  0015:2
                        END;                                                                           42488400 T  0016:1
                                                                                                                   42488200
                      WHILE (TEMP←AIT[I←I-1]).BLKCNTR≥BCNTR%                                           42489000 T  0016:1
                         DO BEGIN DESC←MEMORY[MOTHER←TEMP,MOM];%                                       42490000 T  0018:3
                           IF TEMP.[1:2]≠1 THEN % CHECK FOR FAULT ENTRY                                42490100 T  0022:1
                                 IF TEMP.[1:2]=2 THEN % FILE                                           42491000 T  0023:2
                                 IF TEMP.[33:15]=2 THEN BEGIN%                                         42492000 T  0025:1
                                 FILECLOSE((MOTHER+3)&((DESC[4].[25:2]=2)×@12)                         42493000 T  0027:2
                                                        [18:33:15]);                                   42494000 T  0030:1
                                 GO TO L                END ELSE%                                      42496000 T  0031:0
                                                                                                                   42492000
                                 BEGIN FILECLOSE((DESC INX 5)&                                         42497000 T  0031:2
                                       ((M[DESC[2] INX 4].[25:2]=2)×@12)                               42498000 T  0033:1
                                                                [18:33:15]);                           42499000 T  0036:1
                                     FORGETSPACE(DESC INX 0);%                                         42500000 T  0037:0
                           END ELSE IF TEMP.[1:1] THEN % SAVE MYSELF TASK                              42501000 T  0038:2
                                                                                                                   42497000
                            IF MOTHER=TSX THEN ELSE IF % ARRAY FOR COM5                                42501040 T  0039:3
                            ((NT1←DESC[3])=1 OR(NT1=2 AND DESC[4]≠P1MIX))                              42501050 T  0042:0
                            THEN  % TASK ARRAY OF A SCHEDULED OR                                       42501060 T  0045:2
                                  % RUNNING OFFSPRING                                                  42501070 T  0045:3
                            BEGIN IF NT1=1 THEN                                                        42501100 T  0045:3
                                        SHEETDIDDLER(0,20,DESC[4]); % ES                               42501200 T  0047:0
                                  IF DESC[3]=2 THEN                % RUNNING                            42501300 T  0049:0
                                 BEGIN TERMINATE(DESC[4]&86[CTF]);     % DS                          42501400 T  0050:0
                                       HALT;                                                           42501500 T  0052:0
                                       NOPROCESSTOG ← NOPROCESSTOG-1;                                  42501550 T  0052:2
                                 END;                                                                  42501600 T  0053:3
                                                                                                                   42501400
                                 SLEEP([DESC[3]],-0);          % WAIT FOR DS                          42501650 T  0053:3
                                 GO TO L1;                                                             42501700 T  0055:3
                            END ELSE GO TO L1 ELSE                                                     42501800 T  0056:1
                                                                                                                   42501100
                            IF SOFTI>0 THEN IF JAR[P1MIX,2].[5:1] THEN                                 42501810 T  0056:1
                                  IF MOTHER=SFINTX THEN ELSE                                           42501820 T  0059:2
                            ELSE ELSE                                                                  42501830 T  0061:1
L1:                      ARTN(DESC,TEMP,DIMENSIONS);                                                   42501900 T  0062:1
                         MEMORY[MOTHER]←0;%                                                            42502000 T  0064:2
L:                                                                                                     42503000 T  0066:0
```

```
      END;%                                                                  42504000 T  0066:0
                                                                                      42490000
      AIT[0]←I;%                                                             42505000 T  0066:2
      PRT[P1MIX,CURBLKCNTR]←BCNTR-1;%                                        42506000 T  0067:3
      IF I>0 THEN DO%%WIPE OUT BAD LABELS IN FAULT CELLS                     42506100 T  0070:0
          IF AIT[I],[1:2]=1 THEN                                             42506200 T  0071:1
          IF M[AIT[I],MOM],BLKCNTR≥BCNTR THEN                                42506300 T  0072:3
          M[AIT[I],MOM]←0 UNTIL (I←I-1)≤0;                                   42506400 T  0076:0
    MEMORY[AIT INX NOT 1],[2:1]←0;%                                          42507000 T  0081:0
END ASR;%                                                                    42508000 T  0084:3
                                                                                      42482000
                                                                                SIZE= 0085 WORDS
```

```
                PROCEDURE INTERRUPT(TYPE); VALUE TYPE; REAL TYPE;                                   42510000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 01062
                BEGIN LABEL FLAGBIT,INVALIDINDEX,EXPUNDERFLOW,DIVIDEBYZERO;                         42511000 T  0000:0
                      LABEL XYT;                                                                    42511500 T  0000:0
                      SWITCH SW:=FLAGBIT,INVALIDINDEX,EXPUNDERFLOW,DIVIDEBYZERO;                    42512000 T  0000:0
                      ARRAY TOP==5[*];                                                              42513000 T  0000:0
STACK(F-5) = TOP
                      REAL FLAGTESTER==3;                                                           42513500 T  0000:0
STACK(F-3) = FLAGTESTER
                      REAL MOM,SIZE,ALOC,I;                                                         42514000 T  0000:0
STACK(F+1) = MOM
STACK(F+2) = SIZE
STACK(F+3) = ALOC
STACK(F+4) = I
                      REAL RCW=+1,RCWL=+2,SAVIT=+4; NAME A=+3;                                      42515000 T  0000:0
STACK(F+1) = RCW
STACK(F+2) = RCWL
STACK(F+4) = SAVIT
STACK(F+3) = A
                      REAL R=+1,S=+2,Y=+3;                                                          42516000 T  0000:0
STACK(F+1) = R
STACK(F+2) = S
STACK(F+3) = Y
                BOOLEAN SUBROUTINE DOUBLEPRECISION;                                                 42517010 T  0000:0
                BEGIN R:=M[S:=PRT[P1MIX,8] INX 0]; %IRCW                                            42517020 T  0001:0
                      STREAM(R:=(R INX 0)&R[30:10:2],Y:=[Y]); %GET OP CODE                          42517030 T  0004:1
                      BEGIN SI:=R; SI:=SI-2; DI:=DI+6; DS:=2 CHR END;                               42517040 T  0006:3
                                                                                                                 42517040
                DOUBLEPRECISION:=Y.[45:3]=5;                                                        42517050 T  0008:0
                END;                                                                                42517060 T  0009:2
                                                                                                                 42517020
                      CHECKSTACKSPACE;%                                                %WF          42517100 T  0009:3
                                                                                                                 42517100
                      GO TO SW[TYPE];                                                               42518000 T  0015:1
FLAGBIT;                                                                                            42520000 T  0018:1
                      SAVIT:=TOP;                                                                   42521000 T  0018:1
                      NT1:=ANALYSIS;                                                                42522000 T  0019:1
                      IF SYLLABLE.[41:7]#@35 THEN                                                   42523000 T  0020:1
                      IF SYLLABLE.[45:3]#0 THEN                                                     42524000 T  0021:2
                      BEGIN ERRORFIXER(16); TERMINATE(P1MIX); TERMINALMESSAGE(5) END;               42524100 T  0023:1
                                                                                                                 42524100
                      A:=PRT[P1MIX,4];                                                              42524200 T  0026:0
                      RCW := M[RCWL := PRT[P1MIX,8] INX NOT ((SYLLABLE=@235)+2)];%                  42525000 T  0027:2
                      IF RCW.[33:1] THEN % TYPE 13 INTRNSC                                          42525100 T  0032:0
                      BEGIN                                                                         42525110 T  0032:3
                      I:=0;                                                                         42525115 T  0033:1
                      Y:=[1].[CF];                                                                  42525120 T  0034:0
                      I  :=FLAG((@2520000000000000)&(RCW.[34:14])[CTC]);                            42525130 T  0035:1
                      MAKEPRESENT(Y);                                                               42525140 T  0037:1
                      M[RCWL]:=FLAG(RCW&(M[RCW.[FF]]INX (NFLAG( I )).[CF])[CTC]);                   42525150 T  0038:0
                      GO TO INITIATE;                                                               42525160 T  0042:3
                      END ELSE                                                                      42525170 T  0043:1
                                                                                                                 42525110
                      IF NOT PRT[P1MIX,A[RCW].[8:10]].[2:1] THEN%                                   42525500 T  0043:1
                      MAKEPRESENT(PRTROW[P1MIX] INX A[RCW].[8:10]);%                                42526000 T  0048:0
                      M[RCWL]:=FLAG(RCW&(M[RCW.[18:15]] INX A[RCW].[18:15])[33:33:15]);             42527000 T  0051:1
                      GO TO INITIATE;                                                               42528000 T  0056:2
```

```
INVALIDINDEX:
      FOR I←6 STEP 5 UNTIL 11 DO                                                    42530000 T  0057:0
      IF TOP.[18:15]=(MOM←PRT[P1MIX,I]].[33:15]) THEN                               42531000 T  0057:0
      IF (SIZE←M[MOM].[8:10])<1023 THEN                                             42532000 T  0058:0
      BEGIN IF M[MOM].[2:1]=0 THEN MAKEPRESENT(MOM);                                42533000 T  0061:1
            M[(ALOC←M[MOM].[33:15])-2].[2:1]←1;                                     42534000 T  0064:1
            IF (NT1:=M[ALOC-1].[FF])≠0 THEN DISKRTN(NT1, SIZE);                     42535000 T  0068:0
            M[MOM]←FLAG(0&MOM[18:33:15]                                             42535500 T  0073:0
                  &(IF SIZE<512 THEN 2×SIZE ELSE 1023)[8:38:10]);                   42536000 T  0077:2
            IF TYPE ← P(FLAGTESTER,TOP,XCH,DEL) THEN MAKEPRESENT(MOM)               42537000 T  0078:3
              ELSE                                                                  42537050 T  0083:1
            MAKEPRESENT(ANALYSIS);                                                  42537060 T  0085:2
            MOVE(SIZE,ALOC,M[MOM]);                                                 42538000 T  0086:0
            FORGETSPACE(ALOC);                                                      42539000 T  0087:2
            IF TYPE THEN GO XYT;                                                    42539050 T  0089:3
            GO TO INITIATE;                                                         42539060 T  0090:2
      END;                                                                          42539100 T  0091:2
                                                                                    42539200 T  0092:0
                                                                                                42534000
      ERRORFIXER(4); TERMINATE(P1MIX); TERMINALMESSAGE(7);                          42540000 T  0094:1
EXPUNDERFLOW:                                                                       42542000 T  0096:2
      IF DOUBLEPRECISION THEN M[S-3]←0;                                             42546000 T  0096:2
      M[S-2]←0;                                                                     42547000 T  0100:2
            IF JAR[P1MIX,2].[3:1] AND PRT[P1MIX,@51].[43:1] THEN                    42547100 T  0102:2
         PRT[P1MIX,@51]←P(DUP,LOD) OR 6;                                            42547200 T  0105:3
      GO TO INITIATE;                                                               42548000 T  0108:3
DIVIDEBYZERO:                                                                       42550000 T  0109:1
            IF (P(JAR[P1MIX,2],DUP)≥0 AND NOT(P(XCH).[3:1] AND                      42550500 T  0109:1
               PRT[P1MIX,@51].[44:1])) THEN                                         42550600 T  0111:3
         BEGIN ERRORFIXER(8); TERMINATE(P1MIX); TERMINALMESSAGE(13) END              42551000 T  0114:0
                                                                                                42551000
         ELSE IF JAR[P1MIX,2] < 0 THEN IF PRT[P1MIX,11].[FF] = 0 THEN               42551090 T  0116:3
              PRT[P1MIX,11]←1 ELSE PRT[P1MIX,PRT[P1MIX,11].[FF]]←1                  42551100 T  0121:1
         ELSE                                                                       42551110 T  0126:1
         BEGIN PRT[P1MIX,@51]←P(DUP,LOD) OR 1;                                      42551200 T  0127:0
              IF DOUBLEPRECISION THEN M[S-3]←0;                                     42551300 T  0130:0
              M[S-2]←0;                                                             42551400 T  0133:2
         END;                                                                       42551500 T  0135:2
                                                                                                42551200
      GO TO INITIATE;                                                               42552000 T  0135:2
XYT:                                                                                42553000 T  0136:0
END INTERRUPT;                                                                      42554000 T  0136:0
                                                                                                42511000
                                                                                      SIZE= 0137 WORDS
```

```
                $ SET OMIT = NOT(DCLOG AND DATACOM )                                    42599999 T  0000:0
                % THE FORMAT OF DIRECTORY TOP%                                          44000000 T  0000:0
                %       D[0]=OPTION WORD%                                               44001000 T  0000:0
                %       D[1]=DATE%                                                      44002000 T  0000:0
                %       D[2]=NUMBER OF ELECTRONIC UNITS%                                44003000 T  0000:0
                %       D[3]=HIGHEST ADDRESS OF BACKUP STORAGE%                         44004000 T  0000:0
                %       D[4]=HIGHEST ADDRESS OF DIRECTORY%                              44005000 T  0000:0
                %       D[5]=LAST NUMBER USED FOR CONTROL DECK%                         44006000 T  0000:0
                %       D[6]=FIRST CONTROL DECK QUEUED (LOCATION IN DIRECTORY)%         44007000 T  0000:0
                %       D[7]=LAST CONTROL DECK QUEUED (LOCATION IN DIRECTORY)%          44008000 T  0000:0
                %       D[8]=NEXT NUMBER AVAILABLE FOR PRINTER BACKUP DISK        %P    44008100 T  0000:0
                %       D[9]=CORE, CONTAINS MULTIPROCESSING FACTOR                      44008200 T  0000:0
                %       D[10] THRU D[15] SPECIFY WHICH DC-STATIONS ARE SPO-LIKE,         44008300 T  0000:0
                %       D[16]=QUEUE VALUES FOR SPO STATIONS                             44008305 T  0000:0
                %     D[17] SPECIFIES WHAT THE SPOES ARE                                44008310 T  0000:0
                %       D[18]=TIME OF DAY                                               44008320 T  0000:0
                %       D[19]=VALUE OF FENCE (TIME SHARING MCP)                         44008330 T  0000:0
                %       D[20].[8:10]=NUMBER OF LAST LOG FILE                            44008340 T  0000:0
                %            .[18:30]=NUMBER OF ENTRIES IN LOG (TIMESHARING)            44008350 T  0000:0
                %       D[21]=SCHEDWORD (TIMESHARING)                                   44008360 T  0000:0
                %       D[22].[38:10]=NUMBER OF CURRENT MAINTENANCE LOG.                44008380 T  0000:0
                %            .[28:10]=NUMBER OF CURRENT REMOVTE LOG.                    44008390 T  0000:0
                %       D[23] THRU D[26] SPECIFY WHICH SU-S WERE READY AT THE LAST H/L.  44008400 T  0000:0
                %       D[27] IS RESERVED FOR USE BY THE LOCAL SITE.                    44008410 T  0000:0
                %     D[28]=DISK ADDRESS OF DIRECTORYTOP                                44008499 T  0000:0
                PROCEDURE INTFINISH(AA);                                                44008998 T  0000:0
                                                                  START OF REL SEGMENT; DISK ADDRESS = 01067
PRT(704) = INTFINISH
                    VALUE AA;REAL AA; FORWARD;                                          44008999 T  0000:0
                SAVE PROCEDURE MOREINITIALIZE;FORWARD;                                  44009000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 01023
PRT(705) = MOREINITIALIZE
                SAVE PROCEDURE INITIALIZE;                                              44010000 T  0000:0
                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 01023
                BEGIN                                                                   44010100 T  0000:0
                    REAL A,B,C,I,J,T,W,Y,Z;                                             44011000 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
STACK(F+3) = C
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = T
STACK(F+7) = W
STACK(F+10) = Y
STACK(F+11) = Z
                    REAL INTS,INTSS,LASTL,LDATE,LOC,MEND;                               44012000 T  0000:0
STACK(F+12) = INTS
STACK(F+13) = INTSS
STACK(F+14) = LASTL
STACK(F+15) = LDATE
STACK(F+16) = LOC
STACK(F+17) = MEND
                    REAL IRPB,IRPTB,IRPDBS,IRPTU,IRPBUF;                                44013000 T  0000:0
STACK(F+20) = IRPB
STACK(F+21) = IRPTB
STACK(F+22) = IRPDBS
STACK(F+23) = IRPTU
```

```
STACK(F+24) = IRPBUF
                    REAL MSTART=A, T1=LASTL, SHLM=MEND;                                  44014000 T  0000:0
STACK(F+1) = MSTART
STACK(F+14) = T1
STACK(F+17) = SHLM
                    INTEGER IRPBTS,IRPWRS;                                               44015000 T  0000:0
STACK(F+25) = IRPBTS
STACK(F+26) = IRPWRS
                    INTEGER XCLICK=XCLOCK;                                               44016000 T  0000:0
PRT(171) = XCLICK
                    ARRAY DDD[*],GI[*];                                                  44017000 T  0000:0
STACK(F+27) = DDD
STACK(F+30) = GI
                    ARRAY X=W[*];                                                        44018000 T  0000:0
STACK(F+7) = X
                    LABEL UNITL,TINUL,MISSL;                                             44019000 T  0000:0
                    LABEL AVLP,INLP,LT,LE,LF,LN,LP,LS;                                   44020000 T  0000:0
                  $ SET OMIT = NOT SHAREDISK                                             44024990 T  0000:0
                  $ SET OMIT = DUMP OR DEBUGGING OR BREAKOUT                             44025990 T  0000:0
                  SUBROUTINE XXXXXX; BEGIN A←X-X-X-X-X-X-X-X-X-X-X-X-X-X-X-X; END;%      44037000 T  0000:0
                                                                                                        44037000

                  SUBROUTINE MAKESAVE;                                                   44037200 T  0012:3
                  BEGIN DISKWAIT(-C,M[I],[8:10],M[I], [FF]+MCPBASE);                     44037300 T  0013:0
                        M[I],[CF]:=C; M[C-1]:=@77777; C:=C+M[I],[8:10]+1;%      %162-  44037400 P  0017:2
                  END;                                                                   44037500 T  0024:3
                                                                                                        44037300

                     SUBROUTINE FIX;%                                                    44079000 T  0026:0
                          BEGIN P([M[J]]&I[8:38:10],T,←);%                               44080000 T  0026:0
                               J ← J+I;%                                                 44081000 T  0028:1
                          END;%                                                          44082000 T  0029:2
                                                                                                        44080000

                   $ SET OMIT = NOT(DCSPO AND DATACOM )                                  44082049 T  0029:3
                  MCPBASE:=M[0],[18:30];                                                 44083000 T  0029:3
                  DIRECTORYTOP:=M[1];                                                    44083100 T  0037:1
                   $ SET OMIT = NOT(SHAREDISK)                                           44083200 T  0038:3
                        RESTARTING←1023;                                                 44085000 T  0038:3
                  PEUIO:=FUIO:=[M[@133]]&20[8:38:10] ;                                   44085100 T  0039:2
                        IOQUESLOTS:=32;                                                  44085500 T  0042:1
                        IOQUEAVAIL:=31;                                                  44085600 T  0043:0
                     HOLDER:=DIRECTORYTOP-7-(HOLDMAX+29) DIV 30;  % SEE ALSO 40200100    44086100 T  0043:3
                     USERDISKBOTTOM:=HOLDER-DISKAVAILTABLEMAX;                           44086200 T  0046:2
                     IF (I:=(USERDISKBOTTOM-50) DIV SYSMAX) > 247 THEN I:=247;           44086300 T  0047:3
                     ESPDISKBOTTOM:=50+(SYSNO×I); % BOTTOM OF ESPDISK                    44087000 T  0051:1
                     ESPDISKTOP←ESPDISKBOTTOM+I-8; %TOP OF ESPDISK                       44087100 T  0053:0
                        RRRMECH ← @140000000;%                                           44088000 T  0054:3
                        WITCHINGHOUR:=5184000;                                           44090500 T  0055:2
                        WORDOFEASE:=@2525252525252525;                                   44091000 T  0056:1
                        NOPROCESSTOG ← -1;%                                              44092000 T  0057:0
                        SOFTI ← 0;                                                       44092100 T  0058:0
                   $ SET OMIT = NOT STATISTICS                                           44092490 T  0058:3
                     STREAM(S←18,D←100);%                                                44093000 T  0058:3
                          BEGIN%                                                         44094000 T  0059:3
                               SI ← S; DS ← 11 WDS; D ← DI;                              44095000 T  0059:3
                               DI ← S; 11(DS ← 8 LIT "102(0000" );                       44096000 T  0060:2
                               19(SI ← SI+8);  S ← SI;                                   44097000 T  0062:2
                               DI←D; DS←2 WDS;%                                          44098000 T  0063:2
                               DI←S; DS←16 LIT"042(0000"%                                44099000 T  0064:0
```

```
        END;%

    MSTART:=P(..,INITIALIZE,LOD),[CF];
    AVAIL←@77776;%
   AVLP:M[AVAIL]←@7777700000+AVAIL;%
    INLP:IF J←COREND THEN%
                BEGIN%
                     MEMASK:=MEMASK OR TWO(AVAIL DIV 4096);
                     AVAIL←AVAIL-4096;%
                     GO TO AVLP%
                END;%

         IF J=2 THEN GO TO INLP;%
    M[AVAIL+1]←AVAIL;%
    M[MEND←AVAIL-1]←0&1[2:47:1]%
                     &MSTART[CTF];%
    M[0]←MSTART&MEND[CTF]&1[2:47:1];%
    M[MSTART]←LASTL←MEND;%
    LOC←MEND-4094;%
  LT:IF LOC>4095 THEN%
         BEGIN%
              M[LOC]←@77777;%
          LE:IF J←COREND THEN%
                   BEGIN%
                   MEMASK:=MEMASK OR TWO(LOC DIV 4096);
                    M[LOC+1]←LASTL&MSTART[CTF];%
                    M[LASTL]←M[LASTL]&(LOC+1)[CTF];%
                    M[MSTART]←LASTL←LOC+1;%
               LF:  M[LOC←LOC-4096]←(T←  LASTL )&MSTART[CTF]%
                                                  &1[2:47:1];%
          LS:IF J:=COREND THEN
                   BEGIN
                   MEMASK:=MEMASK OR TWO(LOC DIV 4096);
                   GO TO LF;
                   END;

                      IF J=2 THEN GO TO LS;%
                      M[LASTL]←M[LASTL]&LOC[CTF];%
                      M[MSTART]←LASTL←LOC;%
                    END    ELSE%

              IF J=2 THEN GO TO LE;%
              LOC←LOC-4096; GO TO LT%
         END;%

     LOC←M[MEND].[FF];%
   LP:IF M[LOC].[2:1] THEN    BEGIN%
      LN: LOC←M[LOC].[FF];GO TO LP END;%

              FORGETSPACE(LOC+2);%
              IF LOC≠MSTART THEN%
              GO TO LN;%
  STOREDY←TRUE;%
  $ SET OMIT = NOT(DFX)
         STREAM(S←100,D←18);%
              BEGIN%
              SI ← S; DS ← 11 WDS;
```

```
44100000 T  0066:2
                    44094000
44101000 T  0066:3
44102000 T  0068:1
44103000 T  0069:0
44104000 T  0071:0
44105000 T  0072:0
44106000 T  0072:2
44107000 T  0074:3
44108000 T  0076:0
44109000 T  0076:2
                    44105000
44110000 T  0083:0
44111000 T  0084:1
44112000 T  0086:1
44113000 T  0088:2
44114000 T  0090:1
44115000 T  0092:2
44116000 T  0094:2
44117000 T  0095:3
44118000 T  0096:2
44119000 T  0097:0
44120000 T  0098:2
44121000 T  0099:2
44122000 T  0100:0
44123000 T  0102:1
44124000 T  0104:3
44125000 T  0108:0
44126000 T  0110:2
44127000 T  0113:1
44128000 T  0115:0
44128100 T  0116:0
44128200 T  0116:2
44128300 T  0118:3
44128400 T  0124:0
                    44128100
44129000 T  0124:0
44130000 T  0125:1
44131000 T  0128:0
44132000 T  0130:0
                    44121000
44133000 T  0130:0
44134000 T  0131:3
44135000 T  0133:2
                    44118000
44136000 T  0135:0
44137000 T  0137:0
44138000 T  0139:0
                    44137000
44139000 T  0141:2
44140000 T  0142:3
44141000 T  0143:2
44142000 T  0144:0
44142999 T  0145:3
44144000 T  0145:3
44145000 T  0146:3
44146000 T  0146:3
```

```
                19(DI ← DI+8); DS ← 2 WDS;                                                  44147000 T  0147:1
                END;%                                                                       44148000 T  0148:1
                                                                                                        44145000
                SPACESTACK:=MEND-128;                                                       44148100 T  0148:2
                TAR:=[M[MEND-130]]&2[8:38:10];                                              44148200 T  0149:3
!NTS:=GETSPACE(P(,,COREND,LOD).[CF]-P(,,INITIALIZE,LOD),                                    44149000 T  0152:2
                    [CF],1,1)+2;                                                            44150000 T  0154:1
!NTSS←GETSPACE(240,12,1)+2;                                                    %102-        44150005 P  0156:3
 $ SET OMIT = NOT(AUXMEM)                                                                   44150009 T  0159:0
          I:=(MIXMAX+1)×12                          %PRT THRU USERCODE                      44151000 T  0159:0
                + MIXMAX×NDX                        % NFO                                  44151010 T  0160:0
                + JOBNUMAX                          % BED                                  44151020 T  0160:3
                +10                                 % CHANNEL, CHAN!O ARRAY                 44151030 T  0161:2
 $ SET OMIT = NOT(AUXMEM)                                                                   44151034 T  0162:0
                +SLATESIZE                          % SLATE                                44151050 T  0162:0
 $ SET OMIT = NOT(WORKSET)                                                                  44151051 T  0162:2
               +WKSETDATASIZE+MIXMAX+1+STQUEMAX+1 % WKSET,OLAYTIME,STQUE                    44151052 T  0162:2
 $ POP OMIT % WORKSET                                                                       44151053 T  0165:0
                + MESSAGETABLESIZE                                                          44151055 T  0165:0
                +16                                 % PRNTABLE                            44151060 T  0165:2
                +(6×32)                             %I/O QUEUES                           44151062 T  0166:0
 $SET OMIT=SHAREDISK                                                                        44151064 T  0167:0
                +65                                 %TINU                                 44151066 T  0167:0
 $SET OMIT=NOT OMIT                                                                         44151068 T  0167:2
 $SET OMIT=NOT DFX                                                                          44151074 T  0167:2
                + PUNTSIZE                          %PUNTER                               44151080 T  0167:2
                +48                                 %ISTACK                               44151082 T  0169:0
                +SPACESTACKSIZE                                                           44151083 T  0169:2
                +20                                %MAINTBUFFER                           44151084 T  0170:0
                -1                                  % NFO[0] MUST START IN                 44151085 T  0170:2
                                                    % SECOND MEM LINK                      44151090 T  0171:0
                +2×PSEUDOMAX1 + 9                   % CIDROW,UNITCODE                       44151092 T  0171:0
                +3×(PSEUDOMAXT+1)                   % I/O ASSGNMNT TBLS                     44151094 T  0172:2
 $ SET OMIT = NOT(DCLOG AND DATACOM )                                                       44151099 T  0173:3
 $ SET OMIT = NOT(DATACOM )                                                                 44151199 T  0173:3
 $ SET OMIT = NOT(STATISTICS)                                                               44151219 T  0173:3
 $ SET OMIT = NOT(BREAKOUT)                                                                 44151299 T  0173:3
 $ SET OMIT = NOT DEBUGGING                                                     %763-       44151399 P  0173:3
 $ SET OMIT = NOT(DCSPO AND DATACOM )                                                       44151499 T  0173:3
 $ SET OMIT = NOT(DEBUGGING)                                                                44151599 T  0173:3
 $ SET OMIT = NOT(PACKETS)                                                                  44151619 T  0173:3
                    + PSEUDOMAX1 %PSEUDO[*]                                                 44151620 T  0173:3
                    +2×(MIXMAX+1) %PSEUDOMIX[*],NYLONZIPPER[*]                              44151630 T  0174:2
 $ POP OMIT                                                                                 44151631 T  0175:3
                  +(W:=(ESPDISKTOP-ESPDISKBOTTOM+48) DIV 48) % ESPTAB                       44151700 T  0175:3
 $ SET OMIT = NOT(SHAREDISK)                                                                44151799 T  0178:2
 $ SET OMIT = NOT(SAVERESULTS)                                                              44151820 T  0178:2
 $ SET OMIT = NOT(NEWLOGGING)                                                               44151889 T  0178:2
 $ SET OMIT = NOT(DATACOM )                                                                 44151900 T  0178:2
 $ SET OMIT = NOT(DEBUGGING)                                                                44151920 T  0178:2
                 + P(,OLAY,LOD).[8:10]+1;                                                   44151950 T  0178:2
                J ← GETSPACE(I,MCPTABLEAREAV,0)+1;%                            %167-       44152000 P  0181:0
                M[J] ← 0;%                                                                  44153000 T  0183:1
                MOVE(I-1,J,J+1);%                                                           44154000 T  0184:3
                C←J+1; J←J %C IS USED IN MAKESAVE                                           44154010 T  0187:1
 $ SET OMIT = NOT(DATACOM )                                                                 44154020 T  0188:2
 $ SET OMIT = NOT(DEBUGGING)                                                                44154040 T  0188:2
```

```
                + P(.OLAY,LOD),[8:10]+1;                                    44154070 T  0188:2
                WHILE FALSE DO; %C=REL CONS FIX                             44154080 T  0191:0
                I←MIXMAX×NDX;                                               44154100 T  0192:1
                T←P(.NFO); FIX;                                             44154200 T  0193:2
                I ← MIXMAX+1;%                                              44155000 T  0195:0
                T ← P(.PRT); FIX;%                                          44156000 T  0196:1
                T ← P(.INTABLE); FIX;%                                      44156100 T  0198:0
$ SET OMIT = NOT(AUXMEM)                                                    44156199 T  0200:0
                T ← P(.JAR); FIX;%                                          44157000 T  0200:0
                T←P(.PRYOR); FIX;                                           44157100 T  0202:0
                T←P(.SHEET); FIX;                                           44157200 T  0204:0
                T ← P(.PROCTIME); FIX;%                                     44158000 T  0206:0
                T ← P(.IOTIME); FIX;%                                       44159000 T  0208:0
                T ← P(.DALOC);  FIX;                                        44160000 T  0210:0
                T:=P(.TAR); FIX;                                            44160050 T  0212:0
$ SET OMIT = NOT(STATISTICS)                                                44160099 T  0214:0
$ SET OMIT = NOT(PACKETS)                                                   44160399 T  0214:0
                T:=P(.PSEUDOMIX); FIX;                                      44160400 T  0214:0
                T:=P(.NYLONZIPPER); FIX;                                    44160500 T  0216:0
$ POP OMIT                                                                  44160501 T  0218:0
$ SET OMIT = NOT(BREAKOUT)                                                  44160999 T  0218:0
                T ← P(.REPLY); FIX;%                                        44162000 T  0218:0
                T ← P(.FS); FIX;                                            44162050 T  0220:0
                T:= P(.USERCODE); FIX;                                      44162100 T  0222:0
$ SET OMIT = NOT(DATACOM )                                                  44162109 T  0224:0
$ SET OMIT = NOT(DCLOG AND DATACOM )                                        44162119 T  0224:0
$ SET OMIT = NOT(NEWLOGGING)                                                44162199 T  0224:0
                I ← JOBNUMAX; T ← P(.BED); FIX;%                            44163000 T  0224:0
$ SET OMIT = NOT(WORKSET)                                                   44163010 T  0227:0
                I:=WKSETDATASIZE; T:=P(.WKSETDATA); FIX;                    44163020 T  0227:0
                I := MIXMAX+1; T:=P(.OLAYTIME); FIX;                        44163030 T  0230:0
                I:=16; T:=P(.STQUE); FIX;                                   44163040 T  0233:0
$ POP OMIT % WORKSET                                                        44163050 T  0236:0
                I ← 5;                                                      44164000 T  0236:0
                T ← P(.CHANNEL); FIX;                                       44164010 T  0236:3
                T ← P(.CHANIO); FIX;                                        44164020 T  0239:0
$ SET OMIT = NOT(AUXMEM OR MONITOR)                                         44164099 T  0241:0
                I ← PSEUDOMAX1; T← P(.CIDROW); FIX;                         44164500 T  0241:0
$ SET OMIT = NOT(PACKETS)                                                   44164599 T  0244:0
                T:=P(.PSEUDO); FIX;                                         44164600 T  0244:0
$ POP OMIT                                                                  44164601 T  0246:0
$ SET OMIT = NOT DEBUGGING                                      %763=       44164999 P  0246:0
$ SET OMIT = NOT(DEBUGGING)                                                 44165099 T  0246:0
$ SET OMIT = NOT(DCSPO AND DATACOM )                                        44165599 T  0246:0
                I ← MESSAGETABLESIZE; T ← P(.MESSAGETABLE); FIX;            44165700 T  0246:0
                I:=SLATESIZE; T:= P(.SLATE); FIX;%                          44166000 T  0249:0
                I←16;                                                       44166200 T  0252:0
                T ← P(.PRNTABLE); FIX;%                                     44167000 T  0252:3
$SET OMIT=NOT DFX                                                           44167200 T  0255:0
$SET OMIT=SHAREDISK                                                         44167500 T  0255:0
                I:=65;                                                      44167600 T  0255:0
$SET OMIT=NOT OMIT                                                          44167700 T  0255:3
                T:=P(.TINU);FIX;                                            44168000 T  0255:3
                I:=32;                                                      44168100 T  0258:0
                T:=P(.UNIT);FIX;                                            44168200 T  0258:3
                T ← P(.FINALQUE); FIX;%                                     44169000 T  0261:0
                T ← P(.LOCATQUE); FIX;%                                     44170000 T  0263:0
```

```
                T ← P(.IOQUE); FIX;%                                                    44171000 T  0265:0
$ SET OMIT = NOT(STATISTICS)                                                            44171099 T  0267:0
                T ← P(.TRANSACTION); FIX;%                                              44172000 T  0267:0
                T ← P(.WAITQUE); FIX;%                                                  44173000 T  0269:0
                SPACESTACK:=J; J:=J+SPACESTACKSIZE;                                     44173010 T  0271:0
$ SET OMIT = NOT(SHAREDISK)                                                             44173099 T  0273:0
                ESPTAB←J; J←W+J;                                                        44173200 T  0273:0
                ESPCOUNT:=ESPDISKTOP-ESPDISKBOTTOM;                                     44173300 T  0275:0
                     I ← PSEUDOMAXT + 1;                                                44174000 T  0276:1
                T ← P(.LABELTABLE); FIX;%                                               44175000 T  0277:2
                T ← P(.MULTITABLE); FIX;%                                               44176000 T  0279:0
                T ← P(.RDCTABLE); FIX;%                                                 44177000 T  0281:0
$ SET OMIT = NOT(STATISTICS)                                                            44177099 T  0283:0
$ SET OMIT = NOT(SAVERESULTS)                                                           44177999 T  0283:0
                I ← PSEUDOMAX1 + 9;  T ← P(.UNITCODE); FIX;                             44178100 T  0283:0
                I:=48; T:=P(.ISTACK); FIX;                                              44179000 T  0286:0
                I:=20; T:=P(.MAINTBUFFER); FIX;                                         44179050 T  0289:0
                I:=PUNTSIZE; T:=P(.PUNTER); FIX;                                        44179100 T  0292:0
                STACKUSE ← TRUE;%                                                       44180000 T  0296:0
$ SET OMIT = NOT DEBUGGING                                                              44180099 T  0297:3
                STREAM(A:=[PUNTER[3]]);                                                 44181000 T  0297:3
                BEGIN DS:=13 LIT"INVALID LINK←"; DI:=DI+3;          % 3                 44181100 T  0298:3
                      DS:=16 LIT"INVALID ADDRESS←";                 % 5                 44181200 T  0301:0
                      DS:=16 LIT"SLATE OVERFLOW←";                  % 7                 44181300 T  0303:1
                      DS:=13 LIT"BED OVERFLOW←"; DI:=DI+3;          % 9                 44181400 T  0305:2
$ SET OMIT = AUXMEM                                                                     44181420 T  0307:3
                      DS:=16 LIT"INVLD AUXMEM IO←";                                     44181430 T  0307:3
$ SET OMIT = NOT SHAREDISK                                                              44181450 T  0310:0
                      DS:=32 LIT"10100)0)4A0DKI002900SI000×←A144A";                     44181600 T  0310:0
                      DS:=32 LIT"1DM908/I1×007Y0(1×00P×1≤0SK)0QKI";                     44181700 T  0314:1
                      DS:=25 LIT"0WK)0HKI0,K)08KI0]K)1C←R1"; DS:=LIT"";                 44181800 T  0318:2
                      DS:=30 LIT"KI00002900SI0)0000005129OOSI00";                       44181900 T  0322:2
                      DS:=28 LIT"806≠8A#04A1,1D4A#31≠4A0)0Y/I";                         44182000 T  0326:2
 $ POP OMIT OMIT OMIT                                                                   44182050 T  0330:1
                END;                                                                    44182100 T  0330:1
                                                                                                    44181100
                HALTSET:=1;                                                             44182200 T  0330:2
PSEUDOCOPY ← 0;                                                                         44186005 T  0332:1
          JOBNUM ← -2;%                                                                 44187000 T  0333:0
                PRYOR[0] ← -1;                                                          44187200 T  0334:0
 $ SET OMIT = NOT(DATACOM AND DCSPO )                                                   44187299 T  0335:2
                NUMESS := NUMAINTMESS := -100;                                          44188000 T  0335:2
              LOGHOLDER:=LOGENTRY:=MDELTA:=MLOG:=MAINTLOGARRAY:=NXDISK:=0;              44188200 T  0337:0
              MROW:=100;                                                                44188300 T  0337:1
                KEYBOARDCOUNTER:=1;       % KEEPS KEYIN FROM RUNNING.                  44188500 T  0341:0
 $ SET OMIT = NOT DEBUGGING                                                             44188999 T  0341:3
                M[SPACESTACK]:=WORDOFFASE;                                              44189500 T  0341:3
                MOVE(SPACESTACKSIZE-1,I:=SPACESTACK,[CF],I+1);                          44189550 T  0343:1
                MOVE(48,I,ISTACK,[CF]);                                                 44189600 T  0346:3
                MOVE(@60,I,@100);                                                       44189800 T  0349:0
                NT1:=0; MOVE(14,@160,@161);         % NT1 = @160                    44189900 T  0350:2
 $ SET OMIT = NOT SHAREDISK                                                             44189995 T  0352:3
                IOMASK ← @2000000000;%                                                  44191000 T  0352:3
                UNIT[0]:=@04000077777777777;                                            44191005 T  0353:2
                MOVE(15,UNIT INX 0,P(DUP)+1);                                           44191010 T  0354:3
                MOVE(16,[UNITL],UNIT INX 16);                                           44191015 T  0357:2
 $SET OMIT=SHAREDISK                                                                    44191020 T  0359:3
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```
                MOVE(65,P([[TINUL]),TINU INX 0);                                44191025 T  0359:3
 $SET OMIT=NOT OMIT                                                             44191030 T  0362:0
 $SET OMIT=NOT DFX                                                              44191125 T  0362:0
                GO TO MISSL;                                                    44191145 T  0362:0
UNITL:::                                                                        44191150 T  0365:0
                @0600007777777777,%DRA = 16                                     44191155 T  0365:0
                @0600007777777777,%DRB = 17                                     44191160 T  0366:0
                @1000007777777777,%DKA = 18                                     44191165 T  0367:0
                @1000007777777777,%DKB = 19                                     44191170 T  0368:0
                @0200007777777777,%LPA = 20                                     44191175 T  0369:0
                @0200007777777777,%LPB = 21                                     44191180 T  0370:0
                @1400007777777777,%CPA = 22                                     44191185 T  0371:0
                @0000007777777777,%CRA = 23                                     44191190 T  0372:0
                @0000007777777777,%CRB = 24                                     44191195 T  0373:0
                @1200007777777777,%SPO = 25                                     44191200 T  0374:0
                @2000007777777777,%PPA = 26                                     44191205 T  0375:0
                @2200007777777777,%PRA = 27                                     44191210 T  0376:0
                @2200007777777777,%PRB = 28                                     44191215 T  0377:0
                @2000007777777777,%PPB = 29                                     44191220 T  0378:0
                @2400007777777777,%DCA = 30                                     44191225 T  0379:0
                @3600007777777777 %    = 31                                     44191230 T  0380:0
TINUL:::                                                                        44191235 T  0381:0
                @ 020010040446321,  COMMENT MTA;                                44191240 T  0381:0
                @ 060020040446322,  COMMENT MTB;%                               44191245 T  0382:0
                @ 120040040446323,  COMMENT MTC;%                               44191250 T  0383:0
                @ 160110040446324,  COMMENT MTD;%                               44191255 T  0384:0
                @ 220120040446325,  COMMENT MTE;%                               44191260 T  0385:0
                @ 260140040446326,  COMMENT MTF;%                               44191265 T  0386:0
                @ 320210040446330,  COMMENT MTH;%                               44191270 T  0387:0
                @ 360220040446341,  COMMENT MTJ;%                               44191275 T  0388:0
                @ 420240040446342,  COMMENT MTK;%                               44191280 T  0389:0
                @ 460310040446343,  COMMENT MTL;%                               44191285 T  0390:0
                @ 520320040446344,  COMMENT MTM;%                               44191290 T  0391:0
                @ 560340040446345,  COMMENT MTN;%                               44191295 T  0392:0
                @ 620410040446347,  COMMENT MTP;%                               44191300 T  0393:0
                @ 660420040446351,  COMMENT MTR;%                               44191305 T  0394:0
                @ 720440040446362,  COMMENT MTS;%                               44191310 T  0395:0
                @ 760510040446363,  COMMENT MTT;%                               44191315 T  0396:0
                @ 100520040245121,  COMMENT DRA;%                               44191320 T  0397:0
                @ 200540040245122,  COMMENT DRB;%                               44191325 T  0398:0
                @ 140610040244221,  COMMENT DKA;%                               44191330 T  0399:0
                @ 300620040244222,  COMMENT DKB;%                               44191335 T  0400:0
                @ 540640000434721,  COMMENT LPA;%                               44191340 T  0401:0
                @ 640710000434722,  COMMENT LPB;%                               44191345 T  0402:0
                @ 240720000234721,  COMMENT CPA;%                               44191350 T  0403:0
                @ 240740040235121,  COMMENT CRA;%                               44191355 T  0404:0
                @ 341010040235122,  COMMENT CRB;%                               44191360 T  0405:0
                @ 741020000624746,  COMMENT SPO;%                               44191365 T  0406:0
                @ 441040000474721,  COMMENT PPA;%                               44191370 T  0407:0
                @ 441110000475121,  COMMENT PRA;%                               44191375 T  0408:0
                @ 501120000475122,  COMMENT PRB;%                               44191380 T  0409:0
                @ 501140000474722,  COMMENT PPB;%                               44191385 T  0410:0
                @ 401210000242321,  COMMENT DCA;%                               44191390 T  0411:0
                @ 001220000713147,  COMMENT ZIP;%                               44191395 T  0412:0
                @ 001240000232421,  COMMENT CDA;%                               44191400 T  0413:0
                @ 001310000232422,  COMMENT CDB;%                               44191405 T  0414:0
                @ 001320000232423,  COMMENT CDC;%                               44191410 T  0415:0
```

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                @ 001340000232424,  COMMENT CDD;                                    44191415 T  0416:0
                @ 001410000232425,  COMMENT CDE;                                    44191420 T  0417:0
                @ 001420000232426,  COMMENT CDF;                                    44191425 T  0418:0
                @ 001440000232427,  COMMENT CDG;                                    44191430 T  0419:0
                @ 001510000232430,  COMMENT CDH;                                    44191435 T  0420:0
                @ 001520000232441,  COMMENT CDJ;                                    44191440 T  0421:0
                @ 001540000232442,  COMMENT CDK;                                    44191445 T  0422:0
                @ 001610000232443,  COMMENT CDL;                                    44191450 T  0423:0
                @ 001620000232444,  COMMENT CDM;                                    44191455 T  0424:0
                @ 001640000232445,  COMMENT CDN;                                    44191460 T  0425:0
                @ 001710000232447,  COMMENT CDP;                                    44191465 T  0426:0
                @ 001720000232450,  COMMENT CDQ;                                    44191470 T  0427:0
                @ 001740000232451,  COMMENT CDR;                                    44191475 T  0428:0
                @ 002010000232462,  COMMENT CDS;                                    44191480 T  0429:0
                @ 002020000232463,  COMMENT CDT;                                    44191485 T  0430:0
                @ 002040000232464,  COMMENT CDU;                                    44191490 T  0431:0
                @ 002110000232465,  COMMENT CDV;                                    44191495 T  0432:0
                @ 002120000232466,  COMMENT CDW;                                    44191500 T  0433:0
                @ 002140000232467,  COMMENT CDX;                                    44191505 T  0434:0
                @ 002210000232470,  COMMENT CDY;                                    44191510 T  0435:0
                @ 002220000232471,  COMMENT CDZ;                                    44191515 T  0436:0
                @ 002240000232402,  COMMENT CD2;                                    44191520 T  0437:0
                @ 002310000232403,  COMMENT CD3;                                    44191525 T  0438:0
                @ 002320000232404,  COMMENT CD4;                                    44191530 T  0439:0
                @ 002340000232405,  COMMENT CD5;                                    44191535 T  0440:0
                @ 002410000232406,  COMMENT CD6;                                    44191540 T  0441:0
                @ 002420000232407,  COMMENT CD7;                                    44191545 T  0442:0
                @ 002440000232410,  COMMENT CD8;                                    44191550 T  0443:0
                @ 002510000232411,  COMMENT CD9;                                    44191555 T  0444:0
$SET OMIT=NOT SHAREDISK                                                             44191560 T  0445:0
                @ 000000000446367  COMMENT MTX, ALL SCRATCH TAPES;                  44191590 T  0445:0
MISSL:                                                                              44191595 T  0446:0
                FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                   44192000 T  0446:0
 $ SET OMIT = NOT DATACOM                                                           44192490 T  0447:0
                     PROCTIME[I] ← IOTIME[I] ← @2003777777777777;%                  44193000 T  0447:0
                FOR I:=0 STEP 1 UNTIL 31 DO                                         44193200 T  0451:2
                BEGIN IOQUE[I]:=I-1;                                                44193400 T  0454:0
                     TINU[I].[18:12]:=0;                                            44193600 T  0455:3
                END;                                                                44193800 T  0458:1
                                                                                                 44193400
                FOR I:=0 STEP 1 UNTIL PSEUDOMAXT DO                                 44194000 T  0460:2
                     LABELTABLE[I] ← @114;%                                         44195000 T  0462:0
                LABELTABLE[25] ← 0;%                                                44196000 T  0465:2
 $ SET OMIT = NOT DEBUGGING                                                         44196999 T  0466:3
                FOR I ← 0 STEP 1 UNTIL PSEUDOMAX + 9 DO                             44201110 T  0466:3
                     UNITCODE[I] := -0; UNITCODE[7] := 0;                           44201120 T  0471:0
          % FIND INITIAL VALUE FOR CORE                                            44201200 T  0474:1
CORE:=P(..COREND,LOD).[CF]-P(..INITIALIZE,LOD).[CF];                                44201300 T  0474:1
                I ← M[M[AVAIL]];                                                    44201400 T  0477:0
                WHILE I.[FF] ≠ @77777 DO                                            44201500 T  0479:1
                     BEGIN CORE ← CORE + I.[FF];  I ← M[I] END;                     44201600 T  0481:0
                                                                                                 44201600
                CORE ← CORE DIV 64;                                                 44202000 T  0486:0
 $ SET OMIT = NOT(DATACOM )                                                         44202004 T  0487:1
 $ SET OMIT = NOT(DEBUGGING)                                                        44202105 T  0487:1
               I←P(,OLAY); MAKESAVE;                                                44202119 T  0487:1
                SHLM←SPACE(10);                                                     44202120 T  0489:0
```

```
                    DDD:=[M[A:=SPACE(483)]]&483[8:38:10];                                    44202500 T  0491:1
                    DISKWAIT(-A,-30,0);                                                     44202600 T  0495:2
                    DISKWAIT(-31-A,-30,MCPNAMESEG);                                         44202700 T  0497:1
                    MOVE(2,A+10+5*SYSNO,A+51+2*SYSNO);                                      44202800 T  0500:0
                    DISKWAIT(A+31,-30,MCPNAMESEG);                                          44202900 T  0504:2
                    STREAM(ML:=MARKLEVEL,PL:=M[3]:=PATCHLEVEL,LL:=LOCALEVEL                 44203000 T  0507:0
                         ,MEMASK,N:=A+10+5*SYSNO                                            44203150 T  0509:1
          $ SET OMIT = NOT(SHAREDISK)                                                       44203179 T  0510:3
                         ,T:=NT1:=SPACE(10));                                               44203200 T  0510:3
                    BEGIN DS<5 LIT "*H/L ";                                                 44204000 T  0513:3
          $ SET OMIT = NOT(SHAREDISK)                                                       44204099 T  0514:3
                          DS<6 LIT" WITH ";SI<N;S1<SI+1;DS<7 CHR;                           44204200 T  0514:3
                    DS:=LIT"/";SI:=SI+1;DS:=7 CHR;DS:=6 LIT" MARK ";                        44204500 T  0516:2
                    SI:=LOC ML; IF SC GEQ " " THEN;                                         44204600 T  0518:2
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                   44204650 T  0519:1
                      ELSE DS:=CHR); DS:=LIT",";                                            44204700 T  0521:0
                    SI:=LOC PL; IF SC GEQ " " THEN;                                         44204750 T  0522:1
                    6(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                   44204800 T  0523:0
                      ELSE DS:=CHR); DS:=2CHR;                                              44204850 T  0524:3
                    SI:=LOC LL; IF SC GEQ " " THEN;                                         44205000 T  0525:3
                    8(IF TOGGLE THEN IF SC="0" THEN SI:=SI+1 ELSE DS:=CHR                   44205050 T  0526:2
                      ELSE DS:=CHR);                                                        44205100 T  0528:1
                    DS:=17LIT" MODS           -<";                                          44205220 T  0529:0
                    SI:=LOC MEMASK; SI:=SI+6; SKIP 4 SB; DI:=DI-2;                          44205300 T  0531:2
                    8(DI:=DI-2;IF SB THEN DS:=LIT"@" ELSE DS:=LIT"R";SKIP SB);              44205600 T  0532:2
                    END;                                                                    44206100 T  0535:1
                                                                                                        44204000
                    MOVE(10,NT1,SHLM);                                                      44206200 T  0535:2
                    SPOUT(NT1);                                                             44206300 T  0537:0
                    MOREINITIALIZE;                                                         44206350 T  0538:1
END OF INITIALIZE;                                                                          44206400 T  0538:3
                                                                                                        44010100
                                                                                SIZE= 0541 WORDS
```

```
                    SAVE PROCEDURE MOREINITIALIZE;                                                  44206450 T  0000:0
                                                                                  START OF SAVE SEGMENT; BASE ADDRESS = 01564
                    BEGIN                                                                           44206500 T  0000:0
                        REAL                                                                        44206550 T  0000:0
                          A=+1,B=+2,C=+3,I=+4,J=+5,T=+6,W=+7,Y=+8,Z=+9;                             44206700 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
STACK(F+3) = C
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = T
STACK(F+7) = W
STACK(F+10) = Y
STACK(F+11) = Z
                        REAL                                                                        44206750 T  0000:0
                          INTS=+10,INTSS=+11,LASTL=+12,LDATE=+13,LOC=+14,MEND=+15;                  44206800 T  0000:0
STACK(F+12) = INTS
STACK(F+13) = INTSS
STACK(F+14) = LASTL
STACK(F+15) = LDATE
STACK(F+16) = LOC
STACK(F+17) = MEND
                        REAL                                                                        44206850 T  0000:0
                          IRPB=+16,IRPTB=+17,IRPDBS=+18,IRPTU=+19,IRPBUF=+20;                       44206900 T  0000:0
STACK(F+20) = IRPB
STACK(F+21) = IRPTB
STACK(F+22) = IRPDBS
STACK(F+23) = IRPTU
STACK(F+24) = IRPBUF
                        REAL                                                                        44206950 T  0000:0
                           T1=LASTL,SHLM=MEND;                                                      44207000 T  0000:0
STACK(F+14) = T1
STACK(F+17) = SHLM
                        INTEGER                                                                     44207050 T  0000:0
                          IRPBTS=+21,IRPWRS=+22,XCLICK=XCLOCK;                                      44207100 T  0000:0
STACK(F+25) = IRPBTS
STACK(F+26) = IRPWRS
PRT(171) = XCLICK
                        ARRAY DDD=+23[*],GI=+24[*];                                             44207150 T  0000:0
STACK(F+27) = DDD
STACK(F+30) = GI
                        ARRAY X  =W[*];                                                         44207200 T  0000:0
STACK(F+7) = X
                    $ SET OMIT = NOT SHAREDISK                                                      44207218 T  0000:0
                       LABEL NULLINT,CONTINUE,BOMBOUT;                                          44207250 T  0000:0
                             P(DEL,STF);                                                        44207300 T  0000:0
                    $ SET OMIT = NOT(SHAREDISK)                                                     44207899 T  0001:3
                    $ SET OMIT = NOT(WORKSET)                                       %143-       44209000 C  0001:3
                             DISKWAIT(-A,30,DIRECTORYTOP+1);                        %143-       44209100 C  0001:3
                             WKSETCYCLETIME:=DDD[T:=4*SYSNO+4];                     %143-       44209200 C  0002:3
                             WKSETINSTRUCT :=DDD[T+1          ];                    %143-       44209300 C  0005:3
                             WKSETOLERANCE :=DDD[T+2          ];                    %143-       44209400 C  0007:3
                             WKSETMAXOLAY  :=DDD[T+3          ];                    %143-       44209500 C  0009:3
                    $ POP OMIT                                                      %143-       44209600 C  0011:3
                             DISKWAIT(-A,30,DIRECTORYTOP-SYSNO);                                44213000 T  0011:3
                             CORE.[4:14]:=IF DDD[9]=0 THEN 100 ELSE DDD[9],[4:14];              44213500 T  0013:3
                             OPTION + DDD[0];%                                                  44214000 T  0018:2
```

```
                SAVEWORD:=RRRMECH:=DDD[29];                                    %146-
                FOR T:=0 STEP 1 UNTIL 31 DO                                    %146-
                   IF (TWO(T) AND SAVEWORD) # 0 THEN                           %146-
                      LABELTABLE[T]:=@114;  % MARK SAVED                       %146-
                T + 0;%
 $ SET OMIT = NOT SHAREDISK
                XCLICK:=(@7777777777700 AND DDD[18]) MOD 5184000;
                NEUP:=DDD[2] MOD 100 ;
                NEUP:=NEUP&(NEUP+DDD[2] DIV 100)[CTF]&NEUP[3:33:15];
                DATE:=DDD[1];
 $ SET OMIT = NOT(SHAREDISK)
%
%   SET UP DISK POINTERS AND BUILD OR CLEANOUT DIRECTORY.
%
%   ESPDISK MAY NOT BE USED ABOVE THIS POINT SO THAT THE SHAREDISK
%   SCRATCHDIRECTORY, WHICH IS UNPROTECTED, CAN BE RECOVERED.
%
                STREAM(B:=0:A:=BYPASS:=DDD[4],D:=P(,DIRDSK));
                BEGIN SI:=LOC A; DS:=8 DEC; DI:=LOC B;
                     SI:=LOC D; SI:=SI+8; DS:=WDS;
                END; I:=P INX 0;  % GET LOCATION IN INITIALIZE

                DISKBOTTOM:=BYPASS-2;
                M[INTS-2]:=(J:=*P(DUP))&I[CTC];
                M[J].[FF]:=I;
                M[I]:=J&(INTS-2)[CTF];
                FORGETSPACE(INTS);  % RETURN PART OF INITIALIZE
                INTS:=I + 2;
                IF (T+NEUP.[FF]-NEUP.[CF])>0 THEN
                NEUP+NEUP&10[CTC]&(10+T)[CTF];%SAVE # OF EUS ON DKA.
                I:=NEUP.NEUF;
                Z:=(Y:=I + EUIOFFSET) + I
 $ SET OMIT = SHAREDISK
                   + (B:=(I+1) DIV 2 + I + 2)
 $ POP OMIT
                ;J:=GETSPACE(Z,AVTABLEAREAV,1)+2;                              %167-
                MOVE(Z,J-1,J);
                EUIO:=(J INX M)&Y[8:38:10];
                PEUIO:=((J:=J+Y) INX M)&I[8:38:10];
 $ SET OMIT = SHAREDISK
                AVTABLE:=((J+I) INX M)&B[8:38:10];
 $ POP OMIT
                T1:=GETSPACE(200,0,1)+2;            % SPACE FOR INTRNSC
                ACTDATE:=WEEKDAY:=0;
 $ SET OMIT = NOT(SHAREDISK)
                DIRECTORYBUILDER(A,DDD);
                FORGETSPACE(P(..DIRECTORYBUILDER,LOD) INX 0);
                MrP(..DIRECTORYBUILDER)]:=(*P(DUP))&(*P(.ESPBIT))[CTC];%
 $ SET OMIT = NOT(SHAREDISK)
%
%   SET UP INTRINSICS TABLES AND LOCK MCP.
%
    DISKWAIT(-A,-30,0);
    IF (DDD[I:=5×SYSNO+13] EQV 0) AND (DDD[I+1] EQV 0) = NOT 0 THEN
      GO TO NULLINT;
    IF (T:=DIRECTORYSEARCH(DDD[I],DDD[I+1],17))≠0 THEN
    IF (NT1:=MrT+4].[36:6])≠0 AND NT1≠DCINTYPE THEN
```

```
44214100 C  0019:2
44214200 C  0021:0
44214300 C  0022:0
44214400 C  0023:3
44215000 T  0027:3
44216690 T  0028:2
44216900 T  0028:2
44216910 T  0030:2
44216940 T  0032:0
44216950 T  0035:2
44216959 T  0036:2
44239500 T  0036:2
44239600 T  0036:2
44239700 T  0036:2
44239800 T  0036:2
44239900 T  0036:2
44240000 T  0036:2
44240500 T  0036:2
44240520 T  0038:3
44240540 T  0039:2
44240560 T  0040:1
                  44240520
44240580 T  0041:2
44240600 T  0042:3
44240620 T  0046:0
44240640 T  0048:1
44240660 T  0050:3
44240680 T  0051:2
44240690 T  0052:3
44240695 T  0055:2
44240700 T  0058:1
44240800 T  0059:2
44240819 T  0060:3
44240820 T  0060:3
44240821 T  0063:1
44240840 P  0063:1
44240860 T  0067:0
44240880 T  0069:0
44240900 T  0071:1
44240919 T  0074:2
44240920 T  0074:2
44240921 T  0077:1
44241000 T  0077:1
44241150 T  0079:2
44241179 T  0080:3
44242000 T  0080:3
44242010 T  0082:0
44242020 C  0083:2
44242049 T  0086:0
44242700 T  0086:0
44242800 T  0086:0
44242900 T  0086:0
44243000 T  0086:0
44243250 T  0087:3
44243500 T  0092:3
44243750 T  0093:2
44244000 T  0096:3
```

```
    BEGIN FORGETSPACE(T);                                                    44244500 T  0101:1
          P(DIRECTORYSEARCH(NABS(DDD[I]),DDD[I+1],16),DEL);                  44245000 T  0102:2
          DDD[I]:=DDD[I+1]:=0;                    % REMOVE INTRINSICS        44245500 T  0105:1
OKSEGZEROWRITE:= TRUE;                                          %204-        44245999 C  0108:0
          DISKWAIT(A,-30,0);                                                 44246000 T  0108:3
OKSEGZEROWRITE:= FALSE;                                         %204-        44246001 C  0110:1
NULLINT: FORGETSPACE(T1);                                                    44246500 T  0111:0
          T1:=0;                                                             44247000 T  0111:3
    END ELSE                                                                 44247500 T  0112:2
                                                                                        44244500
    BEGIN INTRINSICTABLEBUILDER(T&T1[CTF]);                                  44248000 T  0112:2
          FORGETSPACE(T);                                                    44248500 T  0116:1
    END ELSE GO TO NULLINT;                                                  44249000 T  0117:0
                                                                                        44248000
 $ SET OMIT = NOT SHAREDISK                                                  44249495 T  0117:0
    INTFREE:=1;                                                              44250000 T  0117:0
    IF (T:=DIRECTORYSEARCH(DDD[I-3],DDD[I-2],17))#0 THEN                     44250500 T  0118:3
    BEGIN                                                                    44251000 T  0122:2
 $ SET OMIT = NOT STATISTICS                                                 44251495 T  0123:0
          FORGETSPACE(T);                                                    44252000 T  0123:0
    END ELSE                                                                 44252500 T  0123:3
                                                                                        44251000
          LBMESS(DDD[I-3],DDD[I-2],-15,0,0,0,1);                             44253000 T  0123:3
 $ SET OMIT = SHAREDISK                                                      44253495 T  0128:1
    MCPFREE:=1;                                                              44253500 T  0128:1
 $ POP OMIT                                                                  44253505 T  0130:0
%                                                                            44253700 T  0130:0
%   ABORT LOGGING,                                                           44253800 T  0130:0
%                                                                            44253900 T  0130:0
    DISKWAIT(-A,210,ESPDISKTOP+1);                                           44254000 T  0130:0
    T:=0;                                                       %761-        44254100 C  0132:0
    FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                        44254500 T  0132:3
BEGIN USERCODE[I] := 0;                                                      44255000 T  0134:0
      T ← DDD[3×I+92].[24:24] OR T;                                          44255500 T  0135:1
END;                                                                         44256000 T  0138:1
                                                                                        44255000
GI:=[M[SPACE(210)]]&210[8:38:10];                               %761-        44256100 C  0140:2
MOVE(210,A,GI);                                                 %761-        44256150 C  0144:1
DDD[3]:=0;                                                      %761-        44256200 C  0146:0
MOVE(206,A+3,A+4);                                              %761-        44256250 C  0147:1
DISKWAIT(A,210,ESPDISKTOP+1);                                   %761-        44256300 C  0149:3
IF T # 0 AND DDD[2] = "ABORT" THEN%                                          44256500 T  0151:2
BEGIN                                                           %761-        44257000 P  0153:2
      FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                      44259500 T  0154:0
      IF (B←GI[3×I+92].[CF])≠0 THEN                                          44260000 T  0156:0
      IF B DIV 1000000+1 LEQ NEUP.[CF] THEN                                  44260500 T  0159:0
      BEGIN                                                                  44261000 T  0161:3
            DISKWAIT(-A,30,B);                                               44261500 T  0162:1
            IF (T:=DDD[1] DIV 5×6) GTR 999 OR T LSS 0 THEN GO BOMBOUT;       44262000 T  0163:3
            USERCODE[I]←SPACE(T);                                            44262500 T  0167:1
            FOR J←0 STEP 1 UNTIL (T-1) DIV 30 DO                             44263000 T  0170:3
            BEGIN                                                            44263500 T  0175:2
                  MOVE(IF (C←T-30×J)>30 THEN 30 ELSE C,                      44264000 T  0175:2
                        A,USERCODE[I]+J×30);                                 44264500 T  0179:3
                  IF (C←DDD[0])≠0 THEN                                       44265000 T  0181:3
                  IF C DIV 1000000≥NEUP.[CF] OR C<0 THEN                     44265500 T  0183:1
                        GO BOMBOUT ELSE                                      44266000 T  0186:2
```

```
                    DISKWAIT(-A,30,C);                                          44266500 T  0186:2
                END;                                                            44267000 T  0188:3
                                                                                         44263500
            END ELSE GO BOMBOUT;                                                44267500 T  0191:0
                                                                                         44261000
            FOR I←1 STEP 1 UNTIL MIXMAX DO                                      44268000 T  0193:1
            IF (C←USERCODE[I])≠0 THEN                                           44268500 T  0194:0
            BEGIN                                                               44269000 T  0195:2
                G1[3×I+92].[24:24]←B←GETESPDISK;                                44269500 T  0196:0
                T←(USERCODE[I]←M[C+1]) DIV 5×6;                                 44270000 T  0200:1
                FOR J←0 STEP 1 UNTIL (T-1) DIV 30-1 DO                          44270500 T  0204:1
                    M[C+J×30]←GETESPDISK;                                       44271000 T  0209:2
                DISKWAIT(C,T,B);                                                44271500 T  0212:3
                FORGETSPACE(C);                                                 44272000 T  0214:0
            END;                                                                44272500 T  0214:3
                                                                                         44269000
        END;                                                                    44273000 T  0217:0
                                                                                         44257000
        GO CONTINUE;                                                            44273500 T  0217:0
BOMBOUT:                                                                        44274000 T  0217:2
        STREAM(D←T←SPACE(3));                                                   44274500 T  0217:2
            DS←22 LIT"**ABORT LOG DESTROYED←";                                  44275000 T  0220:1
        SPOUT(T);                                                               44275500 T  0223:2
        FOR I←1 STEP 1 UNTIL MIXMAX DO USERCODE[I]←0;                           44276000 T  0224:3
CONTINUE:                                                                       44276500 T  0229:2
        INTFINISH(A);                                                           44280000 T  0229:2
        IF AUTORN THEN BEGIN RUNUMBER←MIXMAX; STARTADECK(0) END;        %902-   44280100 C  0230:1
                                                                                         44280100
        FORGETSPACE(INTS); FORGETSPACE(INTSS);                                  44281000 T  0233:0
        MIP(..MOREINITIALIZE)]:=(*P(DUP))&(*P(.ESPBIT))[CTC];%          %162-   44281500 C  0234:2
        GO TO NOTHINGTODO;                                                      44282000 T  0237:0
END;                                                                            44440000 T  0237:2
                                                                                         44206500
                                                                        SIZE= 0238 WORDS
```

```
                    SAVE REAL PROCEDURE COREND;%
                    BEGIN REAL T; P(INT)); END;%
STACK(F+2) = T
```

```
                                                    44441000 T  0000:0
                                  START OF SAVE SEGMENT; BASE ADDRESS = 01802
                                                    44442000 T  0000:0

                                                                 44442000
                                                       SIZE= 0002 WORDS
```

```
                PROCEDURE INTFINISH(AA);VALUE AA;REAL AA;                                   45000000 T  0000:0
                                                                                  START OF REL SEGMENT; DISK ADDRESS = 01067
                BEGIN REAL RCW=+0,MSCW=-2;                                                  45001000 T  0000:0
STACK(F+0) = RCW
STACK(F+2) = MSCW
                    REAL A=+1,B=A+1,C=B+1,I=C+1,J=I+1,T=J+1,W=T+1,Y=W+1,Z=Y+1;               45002000 T  0000:0
STACK(F+1) = A
STACK(F+2) = B
STACK(F+3) = C
STACK(F+4) = I
STACK(F+5) = J
STACK(F+6) = T
STACK(F+7) = W
STACK(F+10) = Y
STACK(F+11) = Z
                    REAL INTS=Z+1,INTSS=INTS+1,LASTL=INTSS+1,LDATE=LASTL+1,LOC=LDATE+1,      45002100 T  0000:0
STACK(F+12) = INTS
STACK(F+13) = INTSS
STACK(F+14) = LASTL
STACK(F+15) = LDATE
STACK(F+16) = LOC
                        MEND=LOC+1;                                                         45002200 T  0000:0
STACK(F+17) = MEND
                    REAL IRPB=MEND+1,IRPTB=IRPB+1,IRPDBS=IRPTB+1,IRPTU=IRPDBS+1,            45002300 T  0000:0
STACK(F+20) = IRPB
STACK(F+21) = IRPTB
STACK(F+22) = IRPDBS
STACK(F+23) = IRPTU
                        IRPBUF=IRPTU+1;                                                     45002400 T  0000:0
STACK(F+24) = IRPBUF
                    INTEGER IRPBTS=IRPBUF+1,IRPWRS=IRPBTS+1;                                45002500 T  0000:0
STACK(F+25) = IRPBTS
STACK(F+26) = IRPWRS
                    REAL T1=LASTL,SHLM=MEND;                                                45002600 T  0000:0
STACK(F+14) = T1
STACK(F+17) = SHLM
                    ARRAY DDD=IRPWRS+1[*],GI=DDD+1[*];                                      45002700 T  0000:0
STACK(F+27) = DDD
STACK(F+30) = GI
                    ARRAY X=W[*];                                                           45002800 T  0000:0
STACK(F+7) = X
                    LABEL NOGOOD,LOOP;                                                      45003000 T  0000:0
                $ SET OMIT = NOT(STATISTICS)                                                45003199 T  0000:0
                $ SET OMIT = NOT(AUXMEM)                                                    45003299 T  0000:0
                $ SET OMIT = NOT(DATACOM)                                                   45003999 T  0000:0
                    P(RCW,MSCW,STF); RCW:=RCW&P(XCH)[CTC];                                  45075590 T  0000:0
                        TIMEOUT(SPACE(10));DATEOUT(SPACE(10));                              45075600 T  0002:1
                $ SET OMIT = NOT SEPTICTANK                                                 45088990 T  0007:0
                $ SET OMIT = NOT(DCSPO AND DATACOM )                                        45090000 T  0007:0
                    WHILE FALSE DO; %FIX FOR C=RELATIVE CONSTANT ERRORS                     45092105 T  0007:0
                    IF(I:=DIRECTORYSEARCH("SYSTEM ","LOG     ",5))#0 THEN                   45092110 T  0008:1
                        BEGIN IF(J:=M[I+10])=0 THEN                                         45092120 T  0010:2
                            BEGIN M[I+10]:=J:=GETUSERDISK(M[I+8]);                          45092130 T  0013:2
                            STREAM(DATE,A:=0,B:=I INX 1);                                   45092140 T  0018:2
                            BEGIN SI:=LOC DATE;DI:=LOC A;DS:=8 OCT;                         45092150 T  0020:1
                                DI:=LOC A;DI:=B;DI:=DI+1;DS:=3 CHR;                         45092160 T  0021:0
                            END;                                                            45092170 T  0022:0
```

```
                    M[I INX 1].[25:23]:=XCLOCK+P(RTR);                                  45092180 T  0022:1
                    DISKWAIT(I INX 0,30,I.[FF]);                                        45092190 T  0026:0
                    END;                                                                45092200 T  0028:1
                                                                                                    45092150
                DISKWAIT(-A,30,J);                                                      45092210 T  0028:1
                IF DDD[0] LSS DDD[1] AND                                                45092220 T  0029:3
                   DDD[1]=M[I+8]*6 AND                                                  45092230 T  0031:0
                   DDD[4]="DISKLOG" THEN                                                45092240 T  0034:0
                   BEGIN DISKWAIT(-A-60,30,J+DDD[2] DIV 6);                             45092250 T  0035:1
                   IF DDD[(DDD[2] MOD 6)*5+60]=4 THEN                                   45092260 T  0039:0
                      BEGIN DDD[0]:=DDD[2]-1;                                           45092270 T  0041:3
                            DISKWAIT(A,30,J);                                           45092280 T  0044:1
                      END;                                                              45092290 T  0045:2
                                                                                                    45092270
                   END ELSE                                                             45092300 T  0045:2
                                                                                                    45092250
                   BEGIN DDD[0]:=0;DDD[1]:=M[I+8]*6;                                    45092310 T  0045:2
                         DDD[2]:=DDD[3]:=0;                                             45092320 T  0053:1
                         DDD[4]:="DISKLOG";DDD[5]:=4;                                   45092330 T  0055:2
                         DISKWAIT(A,30,J);                                              45092340 T  0058:0
                   END;                                                                 45092350 T  0059:1
                                                                                                    45092310
                FORGETSPACE(I);                                                         45092360 T  0059:1
                LOGFREE:=NABS(J);                                                       45092370 T  0060:0
                END ELSE J←0;                                                           45092380 T  0061:0
                                                                                                    45092120
$ SET OMIT = NOT(SHAREDISK)
                IF (I:=DIRECTORYSEARCH("REMOTE ","USERS  ",5))≠0 THEN                   45092390 T  0063:3
                     BEGIN IF (J:=M[I+10])≠0 THEN                                       45093000 T  0063:3
                           BEGIN DISKWAIT(-A,30,J);                                     45094000 T  0066:0
                                 MCP:=NFLAG(M[A]);                                      45094200 T  0069:0
                                 X:=M[I].[1:14] - 1;                                    45094400 T  0071:0
                                 T:=0;                                                  45094600 T  0073:2
                                                                                        45094800 T  0076:0
LOOP:                                                                                   45095000 T  0076:3
 $ SET OMIT = NOT(DATACOM AND RJE )                                                     45095199 T  0076:3
                           END;                                                         45099400 T  0076:3
                                                                                                    45094200
                           FORGETSPACE(I);                                              45099600 T  0076:3
                     END ELSE MCP←"SITE   "; % CHANGE IF REMOTE/USERS%714-              45099800 P  0077:2
                                                                                                    45094000
                ENTERSYSFILE(1); % "LIBMAIN"                                            45099900 T  0081:2
                ENTERSYSFILE(2); % "LDCNTRL"                                            45099910 T  0082:1
                ENTERSYSFILE(3); % "PRNPBT "                                            45099920 T  0083:0
                X:=[M[SPACE(30)]]&30[8:38:10];                                          45101000 T  0083:3
           TOGLE←TOGLE OR ABORTMASK OR USERDISKMASK ;                                   45102000 T  0087:2
                IF GI≠0 THEN%                                                           45103000 T  0089:1
                BEGIN%                                                                  45104000 T  0090:1
                FOR I←20 STEP 1 UNTIL 21 DO                                             45104100 T  0090:3
                 P(WAITIO(@4000100000,@777,I),DEL);                                     45104200 T  0093:0
                LDATE:=GI[1];                                                           45105000 T  0096:3
                FOR I ← 1 STEP 1 UNTIL MIXMAX DO%                                       45106000 T  0097:3
                IF USERCODE[I]≠0 THEN                                                   45107000 T  0100:0
                BEGIN                                                                   45108000 T  0101:0
                     J ← 3*I;                                                           45109000 T  0101:2
                     JARROW[I]:=X;                                                      45111000 T  0102:3
                     PROCTIME[I] ← -CLOCK-P(RTR);%                                      45112000 T  0104:1
```

```
                        P1MIX ← I;%                                                    45113000 T  0106:1
                        X[0] ← GI[J+90];                                               45114000 T  0107:0
                        X[1] ← NABS(GI[J+91]);                                         45115000 T  0109:0
                        STREAM(A←[LDATE],B←[X[5]]);                                    45116000 T  0111:1
                        BEGIN SI←A; DS←8 OCT END;                                      45117000 T  0112:2
                                                                                                   45117000
                        IF GI[J+92].[1:23] GTR XCLOCK THEN                             45118000 T  0113:1
                        IF X[5] MOD 1000 GTR 1 THEN X[5]:=*P(DUP)-1 ELSE               45119000 T  0115:1
                        X[5]:=(X[5]-1001)+365+((X[5] DIV 1000)MOD 4=0);                45120000 T  0119:3
                        X[5]←GI[J+92].[ 1:23]&X[5][1:25:23];                           45121000 T  0125:0
                        X[6]←GI[J+92].[24:24]&USERCODE[I][CTF];                        45122000 T  0128:3
                        USERCODE[I]←GI[I+180];P1MIX←I;                                 45123000 T  0132:0
                        X[3] ← GI[J];%                                                 45124000 T  0134:3
                        X[4] ← GI[J+1];%                                               45125000 T  0136:1
                        X[7] ← GI[J+2];%                                               45126000 T  0138:1
                        IOTIME[I] ← 0;%                                                45127000 T  0140:1
                        OLDIDLETIME ← (CLOCK+P(RTR))×2-X[3];%                          45128000 T  0141:2
                        X[2].[8:10] ← 99;%                                             45129000 T  0144:0
$ SET OMIT = NOT(STATISTICS)                                                           45129099 T  0146:2
                        SIGNOFF(X,FM[SPACE(5)]],0);                                    45130000 T  0146:2
                        P1MIX←0;                                                       45130100 T  0150:0
                        JARROW[I]←0; % IN CASE LOG IS NOT ON DISK.                     45131000 T  0150:3
                        STREAM(I,X,J:=J:=SPACE(10));%                                  45131100 T  0152:0
                        BEGIN SI:=X;DS:=2WDS;DI:=J;%                                   45131200 T  0155:2
                              DS:=LIT"*";DI:=DI+7;DS:=LIT"/";                          45131300 T  0156:1
                              DI:=DI+7;DS:=LIT"=";SI:=LOC I;                           45131400 T  0157:2
                              DS:=2DEC;DS:=9LIT";ABORTED←";%                           45131500 T  0158:2
                        END;%                                                          45131600 T  0160:1
                                                                                                   45131200
                        SPOUT(J);%                                                     45131700 T  0160:2
                    NOGOOD:%                                                           45132000 T  0161:3
                        END;%                                                          45133000 T  0161:3
                                                                                                   45108000
$ SET OMIT = NOT(STATISTICS)                                                           45133099 T  0164:0
                        FORGETSPACE(GI);%                                              45134000 T  0164:0
                        END;                                                           45134100 T  0165:0
                                                                                                   45104000
                        FORGETSPACE(X);                                                45135010 T  0165:0
                        IF CLOCK=0 THEN          % CC103F IS INHIBITED                  45135030 T  0166:0
                        BEGIN STREAM(T:=T:=SPACE(10));                                 45135040 T  0166:3
                              BEGIN DS:=19 LIT"#TIMER NOT RUNNING,";                   45135050 T  0170:0
                                    DS:=22 LIT" RESET CC103F INHIBIT←";                45135060 T  0172:3
                              END;                                                     45135070 T  0175:3
                                                                                                   45135050
                              SPOUT(T);                                                45135080 T  0176:0
                        END;                                                           45135090 T  0177:1
                                                                                                   45135040
                        IF GIVEDATE THEN                                               45135100 T  0177:1
                        BEGIN; STREAM(B←I←SPACE(2));                                   45135110 T  0178:0
                               DS←11 LIT "#DT PLEASE←";                                45135120 T  0181:1
                               SPOUT(I);                                               45135130 T  0183:1
                               DATE←-1;                                                45135140 T  0184:2
                        END;                                                           45135150 T  0185:2
                                                                                                   45135110
                        IF GIVETIME THEN                                               45135160 T  0185:2
                        BEGIN; STREAM(B←I←SPACE(2));                                   45135170 T  0186:1
                               DS←11 LIT "#TR PLEASE←";                                45135180 T  0189:2
```

```
                        SPOUT(I);                                                    45135190 T  0191:2
                        XCLOCK←-5184000;                                             45135200 T  0192:3
                    END;                                                             45135210 T  0193:3
                                                                                                 45135170
                    KEYBOARDCOUNTER:=0;                                              45135215 T  0193:3
                    TOGLE←TOGLE OR HOLDMASK OR KEYBOARDMASK;                         45135220 T  0194:2
                    COMPLEXSLEEP(CLOCK>0 AND XCLOCK≥0 AND DATE≥0);                   45135230 T  0196:1
37324000    ACCIDENTAL ENTRY AT 0
            $ SET OMIT = NOT(AUXMEM)                                                 45135299 T  0203:3
                    LOGOUTMAINT(SHLM);                                               45135600 T  0203:3
                    MROW:=NABS(MROW);                                                45135700 T  0204:2
                    FORGETSPACE(SHLM);                                               45135800 T  0205:2
            $ SET OMIT = SHAREDISK                                                   45136000 T  0206:1
                    DISKWAIT(-KLUMP,3,DIRECTORYTOP+3);                               45137000 T  0206:1
            $ POP OMIT                                                               45137001 T  0208:1
                    TOGLE:=TOGLE OR CDMASK;                          %RHR            45138000 T  0208:1
            $ SET OMIT = NOT(DATACOM  AND DCLOG)                                     45141000 T  0209:2
                    FORGETSPACE(A);                                                  45143000 T  0209:2
            $ SET OMIT = NOT DEBUGGING                                               45144000 T  0210:1
                            TOGLE ← TOGLE OR SHEETMASK OR STATUSMASK                 45150000 T  0210:1
                          OR NSECONDMASK;                                            45151000 T  0211:1
                    READY ← @3416000000;%                                            45152000 T  0212:2
                    PRTROW[P1MIX],[PSF]:=0;                                          45153000 T  0213:1
                    IF T1=0 THEN                                                     45154000 T  0215:3
                    BEGIN STREAM(D:=I:=SPACE(4));                                    45155000 T  0216:2
                         DS:=27 LIT"## LOAD INTRINSICS NOW,...←";                    45156000 T  0219:3
                         SPOUT(I);                                                   45157000 T  0223:3
                    END;                                                             45158000 T  0225:0
                                                                                                 45155000
            $ SET OMIT = NOT(STATISTICS)                                             45178000 T  0225:0
                    RRRMECH ← RRRMECH AND @7637777777;%                              45229000 T  0225:0
                    READY ← READY AND @7637777777;%                                  45230000 T  0226:1
            $ SET OMIT = NOT(DCSPO AND DATACOM )                                     45231000 T  0227:2
            $ SET OMIT = NOT(BREAKOUT)                                               45247099 T  0227:2
                    P(P&RCW[CTC],0,RDS,0,XCH,P&P[CTF],STF);                          45248000 T  0227:2
                    END;%                                                            45249000 T  0230:0
                                                                                                 45001000
                                                                                  SIZE= 0236 WORDS
```

```
                    :16: P(..CORENd,LOD,4,INX,STS); INITIALIZE; % 20-1ST CODE          46000000 T  0000:0
%                   :17:                            % 21 - RES FOR NO MEM MSG          46000500 T  0018:0
                    :18: GO TO TIMER;               % 22 - TIME INTERVAL%              46001000 T  0018:0
                    :19: GO TO IOBUSY;              % 23 - I-O BUSY%                   46002000 T  0018:2
                    :20: GO TO KEYBOARDREQUEST;     % 24 - KEYBOARD REQUEST%           46003000 T  0019:2
                    :21: PRINTERFINISH(20);         % 25 - PRINTER 1 FINISH%           46004000 T  0020:2
                    :22: PRINTERFINISH(21);         % 26 - PRINTER 2 FINISH%           46005000 T  0021:3
                    :23: IOFINISH(RESULT1,1);       % 27 - CHANNEL 1 COMPLETE          46006000 T  0022:3
                    :24: IOFINISH(RESULT2,2);       % 30 - CHANNEL 2 COMPLETE          46007000 T  0024:0
                    :25: IOFINISH(RESULT3,3);       % 31 - CHANNEL 3 COMPLETE          46008000 T  0025:0
                    :26: IOFINISH(RESULT4,4);       % 32 - CHANNEL 4 COMPLETE          46009000 T  0026:0
                    :27: GO TO P2BUSY;              % 33 - P2 BUSY%                    46010000 T  0027:0
                    :28: GO TO INQUEST;             % 34 - DATACOM INQUIRY             46011000 T  0027:2
                    :29: GO TO EXTERNAL;            % 35 - SPECIAL INTERRUPT           46011500 P  0028:2
 $ SET OMIT = SHAREDISK                                                                 46011990 T  0029:2
                    :30: GO TO EXTERNAL;            % 36 - DKA READ CHECK              46012000 P  0029:2
                    :31: GO TO EXTERNAL;            % 37 - DKB READ CHECK              46012500 P  0030:2
 $ SET OMIT = NOT SHAREDISK                                                             46012750 T  0031:2
                    :32: P(0);      GO TO P2PROCESS; % 40 - P2 MEMORY PARITY%          46014000 T  0031:2
                    :33: P(4,17);   GO TO P2PROCESS; % 41 - P2 INVALID ADDRESS         46015000 T  0032:3
                    :34: P(4,1);    GO TO P2PROCESS; % 42 - P2 STACK OVERFLOW          46016000 T  0034:0
                    :36: P(6);      GO TO P2PROCESS; % 44 - P2 COMMUNICATE%           46017000 T  0035:0
                    :37: P(8);      GO TO P2PROCESS; % 45 - P2 PROGRAM RELEASE        46018000 T  0036:3
                    :38: P(10);     GO TO P2PROCESS; % 46 - P2 CONTINUITY BIT         46019000 T  0037:3
                    :39: P(18);     GO TO P2PROCESS; % 47 - P2 PRESENCE BIT           46020000 T  0038:3
                    :40: P(12,0);   GO TO P2PROCESS; % 50 - P2 FLAG BIT              46021000 T  0039:3
                    :41: P(12,1);   GO TO P2PROCESS; % 51 - P2 INVALID INDEX         46022000 T  0041:0
                    :42: P(12,2);   GO TO P2PROCESS; % 52 - P2 EXP UNDERFLOW         46023000 T  0042:0
                    :43: P(4,9);    GO TO P2PROCESS; % 53 - P2 EXP OVERFLOW%         46024000 T  0043:0
                    :44: P(4,11);   GO TO P2PROCESS; % 54 - P2 KINT OVERFLOW%        46025000 T  0044:0
                    :45: P(12,3);   GO TO P2PROCESS; % 55 - P2 DIVIDE BY ZERO        46026000 T  0045:0
                    :48: P(0);      GO TO P1PROCESS; % 60 - P1 MEMORY PARITY%        46027000 T  0046:0
                    :49: P(4,17);   GO TO P1PROCESS; % 61 - P1 INVALID ADDRESS       46028000 T  0048:3
STACKOVERFLOW       :50: P(4,1);    GO TO P1PROCESS; % 62 - P1 STACK OVERFLOW        46029000 T  0050:0
                    :52: P(6);      GO TO P1PROCESS; % 64 - P1 COMMUNICATE%         46030000 T  0051:0
                    :53: P(8);      GO TO P1PROCESS; % 65 - P1 PROGRAM RELEASE      46031000 T  0052:3
                    :54: P(10);     GO TO P1PROCESS; % 66 - P1 CONTINUITY BIT       46032000 T  0053:3
                    :55: P(18);     GO TO P1PROCESS; % 67 - P1 PRESENCE BIT         46033000 T  0054:3
                    :56: P(12,0);   GO TO P1PROCESS; % 70 - P1 FLAG BIT            46034000 T  0055:3
                    :57: P(12,1);   GO TO P1PROCESS; % 71 - P1 INVALID INDEX       46035000 T  0057:0
                    :58: P(12,2);   GO TO P1PROCESS; % 72 - P1 EXP UNDERFLOW       46036000 T  0058:0
                    :59: P(4,9);    GO TO P1PROCESS; % 73 - P1 EXP OVERFLOW%       46037000 T  0059:0
                    :60: P(4,11);   GO TO P1PROCESS; % 74 - P1 INT OVERFLOW%      46038000 T  0060:0
                    :61: P(12,3);   GO TO P1PROCESS; % 75 - P1 DIVIDE BY ZERO      46039000 T  0061:0
START:*:                                                                            46040000 T  0062:0
 TIMER::        CLOCK ← CLOCK+64; XCLOCK ← XCLOCK+64;                               48000000 T  0454:0
 $ SET OMIT = NOT(NEWLOGGING)                                                       48000099 T  0456:2
                IF CLOCK.[37:5] = 0 OR                                              48000500 T  0456:2
                     (SECONDCTR ← (P2MIX≤0)+SECONDCTR)≥ 4 OR%                       48001000 T  0457:3
                     XCLOCK GEQ WITCHINGHOUR THEN                                   48002000 T  0460:1
                     BEGIN IF P(TIO) ≠ 0 THEN%                                      48003000 T  0461:1
                          IF FIRSTWAIT ≠ NEXTWAIT THEN%                             48004000 T  0462:2
                               NEWIO;%                                              48005000 T  0463:3
                          SECONDCTR ← 3;%                                           48006000 T  0464:3
                          IF NSECONDREADY THEN%                                     48007000 T  0465:2
                               BEGIN TOGLE←TOGLE AND NOT NSECONDMASK;               48008000 T  0466:1
                                    INDEPENDENTRUNNER(P(.NSECOND),0,100);           48009000 T  0468:1
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                    END       END;%                                                                  48010000 T  0469:2
                                                                                                                 48008000
                                                                                                                 48003000
$ SET OMIT = NOT(STATISTICS)                                                                         48010004 T  0469:2
$ SET OMIT = NOT(WORKSET)                                                                            48010070 T  0469:2
   IF WKSETCYCLETIME GTR 0 THEN % WORKSET IS OPERATIONAL                                             48010072 T  0469:2
     IF (CLOCK-WKSETCLOCK) GEQ WKSETCYCLETIME THEN                                                   48010074 T  0470:2
        IF WKSETRUNNING=0 THEN % WORKSET IS NOT CURRENTLY RUNNING                                    48010076 T  0472:3
           BEGIN                                                                                     48010078 T  0474:3
           WKSETCLOCK := CLOCK; % RESET THEN WORKSET CLOCK                                           48010080 T  0475:1
           INDEPENDENTRUNNER(P(.WORKSET),0,100);                                                     48010082 T  0476:2
           WKSETRUNNING := 1;                                                                        48010084 T  0477:3
           END;                                                                                      48010086 T  0480:1
                                                                                                                 48010078
$ POP OMIT                                                                                           48010088 T  0480:1
$ SET OMIT = NOT(DATACOM AND DCSPO )                                                                 48010099 T  0480:1
             IF (P(RRR) OR RRRMECH)#READY THEN                                                       48012000 T  0480:1
             IF STATUSBIT THEN                                                                       48012500 T  0481:2
                  BEGIN TOGLE←TOGLE AND NOT STATUSMASK;                                              48013000 T  0482:3
                        INDEPENDENTRUNNER(P(.STATUS),0,100);                                         48014000 T  0484:3
                  END;%                                                                              48015000 T  0486:0
                                                                                                                 48013000
             IF P2MIX>0 THEN                                                                         48015100 T  0486:0
             IF NSLATE=LSLATE THEN                                                                   48015200 T  0486:3
             IF JOBNUM≥0 THEN                                                                        48015300 T  0488:0
             IF (PRYOR[P2MIX] INX 0)≥(PRYOR[BED[0],[3:5]],[FF]) THEN                                 48015400 T  0489:1
                GO TO P2FAKE;                                                                        48015500 T  0492:3
EXTERNAL::%                                                                                          48016000 T  0493:1
        IF P1MIX = 0 THEN GO TO NOTHINGTODO;%                                                        48017000 T  0494:0
INITIATE::%                                                                                          48018000 T  0495:1
        NT1 ← PRT[P1MIX,8];%                                                                         48019000 T  0496:0
        IF P2MIX=0 THEN GO TO COMINIT;                                                               48019500 T  0497:2
        IF NSLATE = LSLATE THEN%                                                                     48020000 T  0498:3
        IF JOBNUM < 0 THEN%                                                                          48021000 T  0499:2
COMINIT:%                                                                                            48022000 T  0500:3
$ SET OMIT = NOT(DATACOM )                                                                           48022099 T  0501:1
        IF NOPROCESSTOG < 0 THEN%                                                                    48023000 T  0501:1
GOGOGO;      BEGIN IF PRT[P1MIX,0] ≠ WORDOFEASE THEN                                                 48024000 T  0502:0
                   BEGIN P(64,STS);                                                                  48025000 T  0504:0
$ SET OMIT = NOT(NEWLOGGING)                                                                         48025099 T  0505:1
                        GO TO STACKOVERFLOW;                                                         48025200 T  0505:1
                   END;                                                                              48025300 T  0505:3
                                                                                                                 48025000
                   P(IN);%                                                                           48026000 T  0505:3
                   IF PRTROW[P1MIX].[PSF] NEQ 0 THEN                                                 48027000 T  0506:0
                   BEGIN P(NT1,STS,0,STF);                                                           48028000 T  0507:2
$ SET OMIT = NOT(BREAKOUT)                                                          %139-            48028090 C  0509:2
                        IF NOTERMSET(P1MIX)                                                          48029000 T  0509:2
                        THEN STOPM(TRUE)                                                             48030000 T  0509:2
                        ELSE IF NOT TERMGOING(P1MIX) THEN                                            48031000 T  0512:0
                             TERMINALMESSAGE(PRTROW[P1MIX].[FF]);                                    48031100 T  0514:1
                   END;                                                                              48031200 T  0516:1
                                                                                                                 48028000
                   SECONDCTR ← 0;%                                                                   48032000 T  0516:1
                   IF SOFTI>0 THEN                                                                   48032100 T  0517:0
                   IF JAR[P1MIX,2],[5:1] THEN % POSS,SOFTWARE INTERRUPTS                             48032150 T  0517:3
                   IF (TSKA ← PRT[P1MIX,TSX]).PBIT THEN                                              48032200 T  0519:3
                        IF TSKA[8],[1:3]=2 THEN                                                      48032250 T  0522:1
```

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                        BEGIN                                                    48032300 T  0524:1
                             IF NOT PRT[P1MIX,INTRPTX].PBIT THEN                 48032400 T  0524:3
                               BEGIN                                             48032500 T  0526:2
                                 P(NT1,STS,0,STF);                               48032600 T  0527:0
                                 MAKEPRESENT([PRT[P1MIX,INTRPTX]]INX 0);         48032700 T  0528:2
                                 NT1 ← PRT[P1MIX,8];                             48032800 T  0530:1
                               END;                                              48032900 T  0532:0
                                                                                            48032500
                             P(NT1,STS,NFLAG(NT1),              % OLD INCW      48032910 T  0532:0
                               FLAG(0&PRTROW[P1MIX] [6:33:9]       % ICW        48032920 T  0533:1
                                    &1 [17:47:1]),SSN,                           48032925 T  0534:0
                               FLAG(0&PRT[P1MIX,INTRPTX][CTC]      %IRCW        48032930 T  0536:1
                               &(NT1 INX 1)[CTF]),SSN);%F=REG==>OLD INCW         48032935 T  0537:2
                             P(8 INX PRT[P1MIX,TSX],DUP,LOD,NT1,CFX,             48032940 T  0539:1
                               XCH,←);                                           48032945 T  0541:3
                             PRT[P1MIX,8] ← NT1 ← -FLAG(NT1 INX 3);%INCW         48032950 T  0542:1
                        END ELSE TSKA[8] ← P(DUP,LOD,SSP);                       48032960 T  0545:2
                                                                                            48032300
$ SET OMIT = NOT(NEWLOGGING)                                                     48032979 T  0547:3
             IF P2MIX ≠ 0 THEN P(NT1,IP1);%                                      48033000 T  0547:3
                  IF NSLATE=LSLATE THEN%                                         48034000 T  0549:2
             IF JOBNUM < 0 THEN P(NT1,IP1);%                                     48035000 T  0550:1
             P(NT1,IP2);%                                                        48036000 T  0552:2
                  P2MIX ← P1MIX;%                                                48037000 T  0553:0
             GO TO NOTHINGTODO;%                                                 48038000 T  0553:3
             END;%                                                               48039000 T  0554:1
                                                                                            48024000
        P(INI);%                                                                 48040000 T  0554:1
        P(NT1,STS,0,STF);%                                                       48041000 T  0554:2
        SLEEP([NOPROCESSTOG],-0);%                                               48042000 T  0556:0
        NT1 ← PRT[P1MIX,8];%                                                     48043000 T  0557:3
        GO GOGOGO;%                                                              48044000 T  0559:1
NOTHINGTODO:;P1MIX ← 0;%                                                         48045000 T  0559:3
$ SET OMIT = NOT(STATISTICS)                                                     48045899 T  0560:3
             P(INI);%                                                            48046000 T  0560:3
$ SET OMIT = NOT(DATACOM )                                                       48046099 T  0561:0
             IF NSLATE ≠ LSLATE THEN%                                            48047000 T  0561:0
             IF STACKUSE THEN%                                                   48048000 T  0561:3
                  BEGIN TOGLE:=TOGLE AND NOT STACKMASK;                          48049000 T  0563:0
                        % MOVE INTO ISTACK                                       48050000 T  0565:0
                        P(ISTACK,STS,SECONDCTR:=0,STF);                          48051000 T  0565:0
                        NSLATE:=NSLATE+2 AND SLATEND;                            48052000 T  0567:1
                        % IF "RUN" THEN NO STACK NECESSARY                      48053000 T  0569:2
                        IF (NT4:=SLATE[NSLATE+1]).[FF] NEQ 0 THEN                48054000 T  0569:2
                        BEGIN                                                    48054200 T  0572:1
                            P(GETSPACE(NT4,[FF],12,NT4 LSS 0)+1,STS);            48054400 T  0572:3
                            STACKUSE:=TRUE;                                      48054600 T  0576:0
                        END;                                                     48054800 T  0577:3
                                                                                            48054200
                        P(MKS,NT4:=SLATE[NSLATE+1],DIB 0,LOD,                    48055000 T  0577:3
                          SLATE[NSLATE],COC);                                    48055200 T  0580:0
                        GO TO NOTHINGTODO;%                                      48056000 T  0580:3
                  END;%                                                          48057000 T  0581:1
                                                                                            48049000
             P( 64,STS);%                                                        48058000 T  0581:1
             IF TOGLE THEN GO TO PROCSWIT; COMMENT TEST HP2TOG;                  48059000 T  0582:0
             FOR NT1 ← 0 STEP 2 UNTIL JOBNUM DO%                                48060000 T  0583:0
```

```
                    BEGIN P(INI);%                                                  48061000 T  0584:0
                         NT2 ← BED[NT1];%                                           48062000 T  0584:1
                         IF P(NT3 ← BED[NT1+1],TOP,XCH,DEL,NOT) THEN%               48063000 T  0585:1
                              BEGIN P1MIX ← [NT2],MIXF;%                            48064000 T  0587:3
          P([NT2],[FF]+1,STS); % SET S REGISTER ABOVE LOGGING FLAG.   %153=        48065000 P  0589:2
                                   NT3 ← NT3;%                                      48066000 T  0591:2
                                   P1MIX ← 0;%                                      48067000 T  0592:1
                                   P( 64,STS);%                                     48068000 T  0593:0
                              END;%                                                 48069000 T  0593:3
                                                                                                 48064000
                         IF NOT(NT2 AND NT3) ≠ NOT 0 THEN%                          48070000 T  0593:3
                              BEGIN P1MIX ← [NT2],MIXF;%                            48071000 T  0595:2
                                   IF JOBNUM ≠ NT1 THEN%                            48074000 T  0597:1
                                   STREAM(N←JOBNUM-NT1,A←[BED[NT1+2]],%             48075000 T  0598:0
                                        B←[BED[NT1]]);%                             48076000 T  0600:2
                                        BEGIN SI←A; DS ← N WDS END;%                48077000 T  0601:1
                                                                                                 48077000
                                   JOBNUM ← JOBNUM-2;%                              48078000 T  0602:1
                                   SECONDCTR ← 0;%                                  48079000 T  0603:2
                                   PRYOR[P1MIX],[FF]← 0;                            48079100 T  0604:1
                                  P([NT2],STF);                                     48080000 T  0606:1
$ SET OMIT = NOT(NEWLOGGING)                                                        48080099 T  0607:0
                                 STARTLOG(P1MIX);                                   48080200 T  0607:0
                                 P(XIT);                                            48080300 T  0609:2
                              END;%                                                 48081000 T  0609:3
                                                                                                 48071000
                         END;%                                                      48082000 T  0609:3
                                                                                                 48061000
$ SET OMIT = NOT(STATISTICS)                                                        48082999 T  0612:0
                    DO DO P(INI) UNTIL (P(RRR) OR RRRMECH)≠READY%                   48084000 T  0612:0
                         UNTIL STATUSBIT;%                                          48084100 T  0613:0
                    TOGLE←TOGLE AND NOT STATUSMASK;                                 48084200 T  0615:1
                    INDEPENDENTRUNNER(P(.STATUS),0,100);                            48084300 T  0616:3
                    GO TO NOTHINGTODO;%                                             48084400 T  0618:0
P2FAKE:                        TOGLE←TOGLE OR HP2MASK;                             48085000 T  0618:2
$ SET OMIT = NOT(NEWLOGGING)                                                        48085099 T  0619:3
                         P(HP2,INI);%                                               48086000 T  0619:3
$ SET OMIT = NOT(NEWLOGGING)                                                        48086099 T  0620:1
PROCSWIT:                P(16);                                                     48087000 T  0620:1
P2PROCESS:;%                                                                        48095000 T  0620:2
         IF P(P1MIX,P2MIX,.P1MIX,←,.P2MIX,STN) ≠ 0 THEN%                            48096000 T  0621:0
         BEGIN                                                                      48097000 T  0623:0
$ SET OMIT = NOT(NEWLOGGING)                                                        48097099 T  0623:2
              P(PRT[P2MIX,8],IP2);                                                  48097200 T  0623:2
         END;                                                                       48097300 T  0624:3
                                                                                                 48097000
         TOGLE←TOGLE AND NOT HP2MASK;                                               48098000 T  0624:3
P1PROCESS:;%                                                                        48099000 T  0626:1
         P(PRT[P1MIX,8],STS,0,STF);%                                                48100000 T  0627:0
$ SET OMIT = NOT(NEWLOGGING)                                          %550=         48100499 C  0629:1
         GO TO P(ONEOHONE);%                                                        48101000 T  0629:1
         GO TO MEMORYPARITY;          %  0%                          %WF           48102000 T  0629:3
         P(NOP,NOP);                  %  2%                          %WF           48102100 T  0630:1
         GO TO NORMALERROR;           %  4%                                        48103000 T  0630:3
         SHORTCOMMUNICATE;            %  6%                                        48104000 T  0631:1
         PROGRAMRELEASE;              %  8                                         48105000 T  0631:3
         CONTINUITYBIT;               % 10                                        48106000 T  0632:1
```

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        INTERRUPT(ONEOHTWO); P(NOP); % 12                                48107000 T  0632:3
        GO TO INITIATE;              % 16                                48108000 T  0633:3
        MAKEPRESENT(ANALYSIS);       % 18                                48109000 T  0634:1
RETURN::    NT1←PRT[P1MIX,8];                                            48110000 T  0635:1
            GO TO COMINIT;                                               48111000 T  0637:2
IOBUSY::                                                                 48117000 T  0638:0
$ SET OMIT = NOT(NEWLOGGING)                                             48117099 T  0638:0
        NT1 ← UNIT[NT2←CHANNEL[0]];                                      48117200 T  0638:0
        UNIT[NT2] ← NT1&0[13:5:5];%                                      48118000 T  0639:3
        STARTIO(NT2);%                                                   48119000 T  0642:0
        GO TO EXTERNAL;%                                                 48120000 T  0642:3
P2BUSY::                                                                 48121000 T  0643:1
$ SET OMIT = NOT(NEWLOGGING)                                             48121099 T  0643:1
        SAVEMIX(P1MIX);                                                  48121200 T  0643:1
        P1MIX ← P2MIX;%                                                  48122000 T  0644:3
        P2MIX ← -1;%                                                     48123000 T  0645:2
        OLDIDLETIME ← OLDIDLETIME-CLOCK-P(RTR);%                         48124000 T  0646:2
        GO TO EXTERNAL;%                                                 48125000 T  0648:1
$ SET OMIT = NOT(SHAREDISK)                                              48125099 T  0648:3
INQUEST::                                                                48125500 T  0648:3
$ SET OMIT = NOT(NEWLOGGING)                                             48125509 T  0648:3
$ SET OMIT = NOT DATACOM                                                 48125540 T  0648:3
$ SET OMIT = DATACOM                                                     48126400 T  0648:3
% USE ACTUALIOERR STACK TO SPOUT "DATACOM/INQUIRY INTERRUPT IGNORED"     48126429 T  0648:3
        INDEPENDENTRUNNER(P(.ACTUALIOERR),0,100);                        48126430 T  0649:0
$ POP OMIT                                                               48126431 T  0650:1
            GO TO EXTERNAL;%                                             48127000 T  0650:1
KEYBOARDREQUEST::%                                                       48128000 T  0650:3
$ SET OMIT = NOT(NEWLOGGING)                                             48128099 T  0651:0
$ SET OMIT = NOT DEBUGGING                                               48128500 T  0651:0
        IF (KEYBOARDCOUNTER ← KEYBOARDCOUNTER+1) = 1 THEN%               48131000 T  0651:0
        INDEPENDENTRUNNER(P(.KEYIN),1,160);                              48132000 T  0652:3
        GO TO EXTERNAL;%                                                 48133000 T  0654:2
MEMORYPARITY::%                                                  %WF     48134000 T  0655:0
        TERMINATE(P1MIX);%                                       %WF     48135000 T  0655:0
        TERMINALMESSAGE(32);%                                    %WF     48136000 T  0655:3
NORMALERROR::%                                                           48137000 T  0656:2
            IF P1MIX = 0 THEN%                                           48138000 T  0657:0
                BEGIN P(@100,STS);%                                      48139000 T  0657:3
                    PUNT(5);        % INVALID ADDRESS                    48140000 T  0659:0
                END;%                                                    48141000 T  0659:3
                                                                                        48139000
            IF ONEOHTWO=1 THEN                                           48141100 T  0659:3
            BEGIN P(NFO[(NT1←(P1MIX-1)×NDX)+2],STS);                     48141200 T  0660:2
                PRT[P1MIX,15]←M[PRT[P1MIX,8]];                           48141300 T  0664:0
                PRT[P1MIX,8]←-[PRT[P1MIX,15]];                           48141400 T  0667:1
                PRT[P1MIX,3]←NFO[NT1];                                   48141500 T  0670:0
                PRT[P1MIX,4]←NFO[NT1+1];                                 48141600 T  0672:0
            END;                                                         48141700 T  0674:2
                                                                                        48141200
            P(ONEOHTWO);                                                 48142000 T  0674:2
                IF P(DUP,DUP)=9 OR P(XCH)=11 THEN                        48142100 T  0674:3
                    ERRORFIXER((ONEOHTWO=9)+1);                          48142200 T  0676:3
            TERMINATE(P1MIX);                                            48142500 T  0679:0
            NT1 ← P;                                                     48143000 T  0679:3
            TERMINALMESSAGE(NT1);                                        48143500 T  0680:1
DIFFCOM::NT4←P;                                                          48144000 T  0681:0
```

```
                P(0,STF,PRT[P1MIX,8],STS,MKS,NT4,DIB 0,LOD,XCH,COC);                    48145000 T  0681:2
                GO TO INITIATE;                                                         48146000 T  0685:1
          END.%                                                                         48161000 T  0685:3
                                                                                                    00003000
                                                                                              SIZE= 0686 WORDS

NUMBER OF ACCIDENTAL ENTRIES = 044        45135230
NUMBER OF ERRORS DETECTED = 000.  COMPILATION TIME = 1284 SECONDS.
PRT SIZE=454 BASE ADDRESS=0686 CORE REQ=2490 DISK RFQ=34740


 LABEL  000000000LINE   00177244? EXECUTE ESPOL/DISK                                  ESPOL  /DISK
```

```
? EXECUTE ESPOL/DISK

          PACKET     13
          INPUT    2313 CARDS FROM 71P
          TIME     1159
          DATE    77244 THURSDAY, 09/01/77



       *** BURROUGHS B5700 DCMCP MARK XVI.0.178  AND INTRINSICS MARK XVI.0.132 ***

           #NO MESSAGES TODAY

      11:59:54  ? EXECUTE ESPOL/DISK
      11:59:54       ? STACK= 1000
      11:59:54       ? FILE LINE= LINE BACK UP TAPE
      11:59:54       ? FILE TAPE= SYMBOL/MCP DISK SERIAL
      11:59:55       ? FILE DISK= MCPA/DISK
      11:59:55       ? FILE STUFF= DCMCP/STUFF
      11:59:55  ? DATA CARD
      11:59:55            5:ESPOL/DISK= 1 BOJ 1159 08/22/77
      11:59:57            DKA OUT SER CODE SITE:ESPOL/DISK= 1
      11:59:57            CDB IN CARD:ESPOL/DISK= 1
      11:59:58            DKA IN SER SYMBOL MCP:ESPOL/DISK= 1
      11:59:59            NEW PBT ON MTB
      11:59:59            MTB OUT 1006 LINE:ESPOL/DISK= 1
      12:00:02            DKA OUT SER DSK2 SITE:ESPOL/DISK= 1
      12:00:04            DKA OUT SER DSK1 SITE:ESPOL/DISK= 1
      12:00:07            DKA OUT SER DCMCP STUFF:ESPOL/DISK= 1
      12:00:13            DKA OUT SER CODISK SITE:ESPOL/DISK= 1
      12:12:51           +OPERATOR KEYED IN: 1TI
      12:12:51            TIME FOR ESPOL/DISK= 1 IS: CP= 11:59, IO= 3:49 IN 12:57
      12:21:11           #DUP LIBRARY DCMCP/STUFF:ESPOL DISK= 1
      12:21:19           +OPERATOR KEYED IN: 1RM
      12:21:19            DCMCP/STUFF REMOVED
      12:21:20            DKA LOK DCMCP STUFF:ESPOL/DISK= 1
      12:21:20            CDB REL CARD:ESPOL/DISK= 1
      12:21:20  ? END.
      12:21:20            DKA REL SYMBOL MCP:ESPOL/DISK= 1
      12:21:21            MTB LOK LINE:ESPOL/DISK= 1
      12:21:38            DKA OUT SER MCPA DISK:ESPOL/DISK= 1
      12:21:59            DKA LOK MCPA DISK:ESPOL/DISK= 1
      12:22:03            DKA OUT SER DSRT1 SITE:ESPOL/DISK= 1
      12:24:05            DKA OUT SER DSRT2 SITE:ESPOL/DISK= 1
      12:25:57            DKA REL DSRT1 SITE:ESPOL/DISK= 1
      12:25:57            DKA REL DSRT2 SITE:ESPOL/DISK= 1
      12:25:58            DKA OUT SER DSRT1 SITE:ESPOL/DISK= 1
      12:32:42            DKA OUT SER DSRT2 SITE:ESPOL/DISK= 1
      12:34:57            NEW PBT ON MTA
      12:34:57            MTA OUT 107 LINE:ESPOL/DISK= 1
      12:39:57            DKA REL DSRT1 SITE:ESPOL/DISK= 1
      12:39:57            DKA REL DSRT2 SITE:ESPOL/DISK= 1
      12:39:58            DKA REL CODISK SITE:ESPOL/DISK= 1
```

```
12:39:58        DKA REL DSK2 SITE:ESPOL/DISK= 1
12:39:59        DKA REL DSK1 SITE:ESPOL/DISK= 1
12:39:59        MTA REL LINE:ESPOL/DISK= 1
12:40:00        DKA REL CODE SITE:ESPOL/DISK= 1
12:40:00        ESPOL/DISK= 1 EOJ 1239
12:40:01        FOR ESPOL/DISK= 1: PROCESS= 2111 SECS, IO= 841 SECS, OLAY= 20
12:40:02        PKT#0013 REMOVED
```

MCPA /DISK
==========

SOURCE FILE: SYMBOL /MCP

```
   --  STREAM LABEL  --  DECLARED AT 06109400
   --  STREAM LABEL  --  DECLARED AT 07257400
   --  STREAM LABEL  --  DECLARED AT 08275500
   --  STREAM LABEL  --  DECLARED AT 08437200
   --  STREAM LABEL  --  DECLARED AT 14383000
   --  STREAM LABEL  --  DECLARED AT 19768800
   --  STREAM LABEL  --  DECLARED AT 22069100
   --  STREAM LABEL  --  DECLARED AT 28440800
   --  STREAM LABEL  --  DECLARED AT 38151000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00316000
A  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00379000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379100
        00379200
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
        00379600
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00389000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00389100
        00389200
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
        00390000  00390100
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00427000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00429000
        00428000
A  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 00431000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00463300
A  --  STREAM VARIABLE  --  DECLARED AT 00652000
        00653600  00653800  00654000
A  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02047000
        02049000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02052800
        02052700
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02178500
A  --  STREAM VARIABLE  --  DECLARED AT 02181000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02187300
        02187100  02187200
A  --  REAL  --  DECLARED AT 02190000
       *02206000* 02223000  02254000 *02255000* 02281000  02287240  02295000  02317000
A  --  STREAM VARIABLE  --  DECLARED AT 02223000
       *02228000* 02229000  02235000 *02237000* 02240000 *02244000* 02244500 *02245000**02251010* 02251030 *02251050*
        02251070 *02251090* 02251110 *02251150* 02252000
A  --  STREAM VARIABLE  --  DECLARED AT 02255000
        02255100
A  --  STREAM VARIABLE  --  DECLARED AT 02281000
        02282000
A  --  STREAM VARIABLE  --  DECLARED AT 02295000
        02297010  02297100 *02297300*
```

```
A  --  STREAM VARIABLE  --  DECLARED AT 02350000
       02353500
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02379000
A  --  STREAM VARIABLE  --  DECLARED AT 02385000
       02386000
A  --  STREAM VARIABLE  --  DECLARED AT 02434270
       02434280
A  --  STREAM VARIABLE  --  DECLARED AT 02434424
       02434426
A  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02604000
       02603000  02606000
A  --  STREAM VARIABLE  --  DECLARED AT 02606000
       02607000 *02631000*
A  --  STREAM VARIABLE  --  DECLARED AT 02664000
       02664100
A  --  STREAM VARIABLE  --  DECLARED AT 04004170
A  --  STREAM VARIABLE  --  DECLARED AT 04083000
       04084000
A  --  STREAM VARIABLE  --  DECLARED AT 04088000
       04089000
A  --  STREAM VARIABLE  --  DECLARED AT 04213000
       *04216000*
A  --  STREAM VARIABLE  --  DECLARED AT 04271800
A  --  STREAM VARIABLE  --  DECLARED AT 04325800
       04330200  04331200  04331600
A  --  STREAM VARIABLE  --  DECLARED AT 04359400
       04360000
A  --  STREAM VARIABLE  --  DECLARED AT 04398400
       04398800 *04399000* 04399800 *04400000*
A  --  STREAM VARIABLE  --  DECLARED AT 04401000
       04401400
A  --  STREAM VARIABLE  --  DECLARED AT 04567320
       04567400
A  --  STREAM VARIABLE  --  DECLARED AT 04567790
       04567800
A  --  STREAM VARIABLE  --  DECLARED AT 04568550
       04568560
A  --  STREAM VARIABLE  --  DECLARED AT 04644000
       04645000
A  --  STREAM VARIABLE  --  DECLARED AT 04656100
       04656600  04657000
A  --  STREAM VARIABLE  --  DECLARED AT 04658500
       04659800  04661000
A  --  STREAM VARIABLE  --  DECLARED AT 04672500
       04672550
A  --  STREAM VARIABLE  --  DECLARED AT 04672950
       04673000
A  --  STREAM VARIABLE  --  DECLARED AT 04675000
       04675150
A  --  STREAM VARIABLE  --  DECLARED AT 04683500
       04683650
A  --  STREAM VARIABLE  --  DECLARED AT 04686100
       04686250
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04702000
       04700000  04701000  04712000  04732000  04733000
A  --  STREAM VARIABLE  --  DECLARED AT 04712000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05606900
```

```
A  --  REAL ARRAY  --  DECLARED AT 05702000
       *05703000* 05705000 *05715000* 05725000  05729000
A  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05842300
        05844110
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05846600
        05848900  05849000  05849460  05850300  05850400  05850500  05850600  05851850
A  --  REAL  --  DECLARED AT 05951000
        05951200  05953125 *05953800**05954800**05956300**05957050* 05957250 *05957300* 05957700  05958600  05959000
        05960685  05962000  05962200  05962400  05962600  05962700 *05962900* 05963000  05968800  05969150  05970800
        05972600  05973400  05973800  05976200  05976400  05976450  05976700  05977050  05977100 *05977400* 05977600
        05978050 *05979050* 05979320
A  --  STREAM VARIABLE  --  DECLARED AT 05958600
        05958800
A  --  STREAM VARIABLE  --  DECLARED AT 05978050
        05978200
A  --  STREAM VARIABLE  --  DECLARED AT 06023000
        06024000 *06026000*
A  --  STREAM VARIABLE  --  DECLARED AT 06037300
A  --  STREAM VARIABLE  --  DECLARED AT 06074100
        06074500 *06074600*
A  --  STREAM VARIABLE  --  DECLARED AT 06077900
        06081300  06081400 *06082400**06083200**06083500**06083800*
A  --  STREAM VARIABLE  --  DECLARED AT 06090000
        06090200
A  --  STREAM VARIABLE  --  DECLARED AT 06098700
        06098800
A  --  STREAM VARIABLE  --  DECLARED AT 06115800
A  --  REAL  --  DECLARED AT 06185000
        06196000  06206140 *06207000* 06212000  06234000  06254000 *06255000* 06258000  06261000 *06262000* 06263000
       *06263200**06268000* 06269000  06271000  06272000
A  --  STREAM VARIABLE  --  DECLARED AT 06196000
        06197000
A  --  STREAM VARIABLE  --  DECLARED AT 06206140
        06206150 *06206175**06206190**06206205**06206215*
A  --  STREAM VARIABLE  --  DECLARED AT 06234000
        06235000
A  --  STREAM VARIABLE  --  DECLARED AT 06353600
        06353620
A  --  STREAM VARIABLE  --  DECLARED AT 06360350
A  --  REAL ARRAY  --  DECLARED AT 06406000
        06426000
A  --  INTEGER  --  DECLARED AT 07008000
       *07144000* 07145000  07148000 *07165000* 07167000 *07175000* 07176000  07178300  07179260
A  --  STREAM VARIABLE  --  DECLARED AT 07179260
        07179290
A  --  STREAM VARIABLE  --  DECLARED AT 07260000
       *07261000*
A  --  REAL  --  DECLARED AT 07269000
       *07271900* 07272000 *07273000* 07275000  07276000 *07278000*
A  --  REAL  --  DECLARED AT 07299000
       *07313000* 07317000  07318010 *07320000* 07322000  07326100
A  --  STREAM VARIABLE  --  DECLARED AT 07358000
       *07365500*
A  --  REAL  --  DECLARED AT 07386000
        07388000 *07397000**07400500* 07401000
A  --  REAL  --  DECLARED AT 07424000
       *07432000* 07435000  07436500  07438200 *07451000*
```

```
A  --  STREAM VARIABLE  --  DECLARED AT 07436500
        07436610
A  --  STREAM VARIABLE  --  DECLARED AT 07461000
A  --  STREAM VARIABLE  --  DECLARED AT 08009000
        08010000 *08011000*
A  --  STREAM VARIABLE  --  DECLARED AT 08034000
        08037000
A  --  STREAM VARIABLE  --  DECLARED AT 08051010
        08051030
A  --  STREAM VARIABLE  --  DECLARED AT 08105700
        08105800
A  --  STREAM VARIABLE  --  DECLARED AT 08106350
       *08106700*
A  --  STREAM VARIABLE  --  DECLARED AT 08107100
        08107300 *08107400*
A  --  STREAM VARIABLE  --  DECLARED AT 08108250
        08108350 *08108700*
A  --  STREAM VARIABLE  --  DECLARED AT 08109300
        08109450 *08109550*
A  --  STREAM VARIABLE  --  DECLARED AT 08110350
        08110850
A  --  STREAM VARIABLE  --  DECLARED AT 08113300
        08113450 *08113550*
A  --  REAL ARRAY  --  DECLARED AT 08172500
       *08175200* 08175300  08175400 *08176000* 08177000 *08177100* 08177200  08178000  08179600 *08179800*
A  --  STREAM VARIABLE  --  DECLARED AT 08179600
        08179700
A  --  REAL  --  DECLARED AT 08255400
       *08259225* 08259250  08259425  08259450  08259525 *08268500* 08268600  08269100 *08272000* 08273250  08276220
        08276260  08276410
A  --  STREAM VARIABLE  --  DECLARED AT 08276260
       *08276310*
A  --  STREAM VARIABLE  --  DECLARED AT 08276260
       *08276310*
A  --  STREAM VARIABLE  --  DECLARED AT 08276410
```

MCPA /DISK
==========

SOURCE FILE: SYMBOL /MCP

```
   --  STREAM LABEL  --  DECLARED AT 06109400
   --  STREAM LABEL  --  DECLARED AT 07257400
   --  STREAM LABEL  --  DECLARED AT 08275500
   --  STREAM LABEL  --  DECLARED AT 08437200
   --  STREAM LABEL  --  DECLARED AT 14383000
   --  STREAM LABEL  --  DECLARED AT 19768800
   --  STREAM LABEL  --  DECLARED AT 22069100
   --  STREAM LABEL  --  DECLARED AT 28440800
   --  STREAM LABEL  --  DECLARED AT 38151000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00316000
A  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00379000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379100
        00379200
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
        00379600
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00389000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00389100
        00389200
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
        00390000  00390100
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00427000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00429000
        00428000
A  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 00431000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00463300
A  --  STREAM VARIABLE  --  DECLARED AT 00652000
        00653600  00653800  00654000
A  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02047000
        02049000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02052800
        02052700
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02178500
A  --  STREAM VARIABLE  --  DECLARED AT 02181000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02187300
        02187100  02187200
A  --  REAL  --  DECLARED AT 02190000
       *02206000* 02223000  02254000 *02255000* 02281000  02287240  02295000  02317000
A  --  STREAM VARIABLE  --  DECLARED AT 02223000
       *02228000* 02229000  02235000 *02237000* 02240000 *02244000* 02244500 *02245000**02251010* 02251030 *02251050*
        02251070 *02251090* 02251110 *02251150* 02252000
A  --  STREAM VARIABLE  --  DECLARED AT 02255000
        02255100
A  --  STREAM VARIABLE  --  DECLARED AT 02281000
        02282000
A  --  STREAM VARIABLE  --  DECLARED AT 02295000
        02297010  02297100 *02297300*
```

```
A  --  STREAM VARIABLE  --  DECLARED AT 02350000
        02353500
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02379000
A  --  STREAM VARIABLE  --  DECLARED AT 02385000
        02386000
A  --  STREAM VARIABLE  --  DECLARED AT 02434270
        02434280
A  --  STREAM VARIABLE  --  DECLARED AT 02434424
        02434426
A  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02604000
        02603000  02606000
A  --  STREAM VARIABLE  --  DECLARED AT 02606000
        02607000 *02631000*
A  --  STREAM VARIABLE  --  DECLARED AT 02664000
        02664100
A  --  STREAM VARIABLE  --  DECLARED AT 04004170
A  --  STREAM VARIABLE  --  DECLARED AT 04083000
        04084000
A  --  STREAM VARIABLE  --  DECLARED AT 04088000
        04089000
A  --  STREAM VARIABLE  --  DECLARED AT 04213000
       *04216000*
A  --  STREAM VARIABLE  --  DECLARED AT 04271800
A  --  STREAM VARIABLE  --  DECLARED AT 04325800
        04330200  04331200  04331600
A  --  STREAM VARIABLE  --  DECLARED AT 04359400
        04360000
A  --  STREAM VARIABLE  --  DECLARED AT 04398400
        04398800 *04399000* 04399800 *04400000*
A  --  STREAM VARIABLE  --  DECLARED AT 04401000
        04401400
A  --  STREAM VARIABLE  --  DECLARED AT 04567320
        04567400
A  --  STREAM VARIABLE  --  DECLARED AT 04567790
        04567800
A  --  STREAM VARIABLE  --  DECLARED AT 04568550
        04568560
A  --  STREAM VARIABLE  --  DECLARED AT 04644000
        04645000
A  --  STREAM VARIABLE  --  DECLARED AT 04656100
        04656600  04657000
A  --  STREAM VARIABLE  --  DECLARED AT 04658500
        04659800  04661000
A  --  STREAM VARIABLE  --  DECLARED AT 04672500
        04672550
A  --  STREAM VARIABLE  --  DECLARED AT 04672950
        04673000
A  --  STREAM VARIABLE  --  DECLARED AT 04675000
        04675150
A  --  STREAM VARIABLE  --  DECLARED AT 04683500
        04683650
A  --  STREAM VARIABLE  --  DECLARED AT 04686100
        04686250
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04702000
        04700000  04701000  04712000  04732000  04733000
A  --  STREAM VARIABLE  --  DECLARED AT 04712000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05606900
```

```
A  --  REAL ARRAY  --  DECLARED AT 05702000
       *05703000* 05705000 *05715000* 05725000  05729000
A  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05842300
        05844110
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05846600
        05848900  05849000  05849460  05850300  05850400  05850500  05850600  05851850
A  --  REAL  --  DECLARED AT 05951000
        05951200  05953125 *05953800**05954800**05956300**05957050* 05957250 *05957300* 05957700  05958600  05959000
        05960685  05962000  05962200  05962400  05962600  05962700 *05962900* 05963000  05968800  05969150  05970800
        05972600  05973400  05973800  05976200  05976400  05976450  05976700  05977050  05977100 *05977400* 05977600
        05978050 *05979050* 05979320
A  --  STREAM VARIABLE  --  DECLARED AT 05958600
        05958800
A  --  STREAM VARIABLE  --  DECLARED AT 05978050
        05978200
A  --  STREAM VARIABLE  --  DECLARED AT 06023000
        06024000 *06026000*
A  --  STREAM VARIABLE  --  DECLARED AT 06037300
A  --  STREAM VARIABLE  --  DECLARED AT 06074100
        06074500 *06074600*
A  --  STREAM VARIABLE  --  DECLARED AT 06077900
        06081300  06081400 *06082400**06083200**06083500**06083800*
A  --  STREAM VARIABLE  --  DECLARED AT 06090000
        06090200
A  --  STREAM VARIABLE  --  DECLARED AT 06098700
        06098800
A  --  STREAM VARIABLE  --  DECLARED AT 06115800
A  --  REAL  --  DECLARED AT 06185000
        06196000  06206140 *06207000* 06212000  06234000  06254000 *06255000* 06258000  06261000 *06262000* 06263000
       *06263200**06268000* 06269000  06271000  06272000
A  --  STREAM VARIABLE  --  DECLARED AT 06196000
        06197000
A  --  STREAM VARIABLE  --  DECLARED AT 06206140
        06206150 *06206175**06206190**06206205**06206215*
A  --  STREAM VARIABLE  --  DECLARED AT 06234000
        06235000
A  --  STREAM VARIABLE  --  DECLARED AT 06353600
        06353620
A  --  STREAM VARIABLE  --  DECLARED AT 06380350
A  --  REAL ARRAY  --  DECLARED AT 06406000
        06426000
A  --  INTEGER  --  DECLARED AT 07008000
       *07144000* 07145000  07148000 *07165000* 07167000 *07175000* 07176000  07178300  07179260
A  --  STREAM VARIABLE  --  DECLARED AT 07179260
        07179290
A  --  STREAM VARIABLE  --  DECLARED AT 07260000
       *07261000*
A  --  REAL  --  DECLARED AT 07269000
       *07271900* 07272000 *07273000* 07275000  07276000 *07278000*
A  --  REAL  --  DECLARED AT 07299000
       *07313000* 07317000  07318010 *07320000* 07322000  07326100
A  --  STREAM VARIABLE  --  DECLARED AT 07358000
       *07365500*
A  --  REAL  --  DECLARED AT 07386000
        07388000 *07397000**07400500* 07401000
A  --  REAL  --  DECLARED AT 07424000
       *07432000* 07435000  07436500  07438200 *07451000*
```

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A  --  STREAM VARIABLE  --  DECLARED AT 07436500
        07436610
A  --  STREAM VARIABLE  --  DECLARED AT 07461000
A  --  STREAM VARIABLE  --  DECLARED AT 08009000
        08010000 *08011000*
A  --  STREAM VARIABLE  --  DECLARED AT 08034000
        08037000
A  --  STREAM VARIABLE  --  DECLARED AT 08051010
        08051030
A  --  STREAM VARIABLE  --  DECLARED AT 08105700
        08105800
A  --  STREAM VARIABLE  --  DECLARED AT 08106350
        *08106700*
A  --  STREAM VARIABLE  --  DECLARED AT 08107100
        08107300 *08107400*
A  --  STREAM VARIABLE  --  DECLARED AT 08108250
        08108350 *08108700*
A  --  STREAM VARIABLE  --  DECLARED AT 08109300
        08109450 *08109550*
A  --  STREAM VARIABLE  --  DECLARED AT 08110350
        08110850
A  --  STREAM VARIABLE  --  DECLARED AT 08113300
        08113450 *08113550*
A  --  REAL ARRAY  --  DECLARED AT 08172500
        *08175200* 08175300  08175400 *08176000* 08177000 *08177100* 08177200  08178000  08179600 *08179800*
A  --  STREAM VARIABLE  --  DECLARED AT 08179600
        08179700
A  --  REAL  --  DECLARED AT 08255400
        *08259225* 08259250  08259425  08259450  08259525 *08268500* 08268600  08269100 *08272000* 08273250  08276220
        08276260  08276410
A  --  STREAM VARIABLE  --  DECLARED AT 08276260
        *08276310*
A  --  STREAM VARIABLE  --  DECLARED AT 08276410
        08276450
A  --  STREAM VARIABLE  --  DECLARED AT 08371000
A  --  STREAM VARIABLE  --  DECLARED AT 08385400
A  --  STREAM VARIABLE  --  DECLARED AT 08412200
A  --  STREAM VARIABLE  --  DECLARED AT 08424000
        08425000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08438900
A  --  REAL  --  DECLARED AT 08440000
        08444000 *08447000* 08448050  08450100  08451100  08454000 *08459000* 08462000 *08470000* 08471030 *08471080*
        08471110 *08471170* 08474000 *08478700* 08478900  08488000
A  --  STREAM VARIABLE  --  DECLARED AT 08444000
        08445000 *08446000*
A  --  STREAM VARIABLE  --  DECLARED AT 08448050
A  --  STREAM VARIABLE  --  DECLARED AT 08450100
A  --  STREAM VARIABLE  --  DECLARED AT 08451100
A  --  STREAM VARIABLE  --  DECLARED AT 08454000
A  --  STREAM VARIABLE  --  DECLARED AT 08462000
A  --  STREAM VARIABLE  --  DECLARED AT 08471030
A  --  STREAM VARIABLE  --  DECLARED AT 08471110
A  --  STREAM VARIABLE  --  DECLARED AT 08474000
A  --  STREAM VARIABLE  --  DECLARED AT 08478900
A  --  STREAM VARIABLE  --  DECLARED AT 08488000
        08492000
A  --  STREAM VARIABLE  --  DECLARED AT 08532000
```

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          08533000
A  --  STREAM VARIABLE  --  DECLARED AT 08551100
          08552000
A  --  STREAM VARIABLE  --  DECLARED AT 08558000
          08559000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08568000
          08572520  08573300
A  --  STREAM VARIABLE  --  DECLARED AT 08572520
          08572530
A  --  REAL  --  DECLARED AT 08576000
          08578000  08578100  08590000  08597050 *08597700*
A  --  STREAM VARIABLE  --  DECLARED AT 08578100
          08578300
A  --  STREAM VARIABLE  --  DECLARED AT 08590000
          08592000
A  --  STREAM VARIABLE  --  DECLARED AT 08597050
          08597100 *08597500*
A  --  REAL  --  DECLARED AT 08601000
          *08605000* 08621500
A  --  STREAM VARIABLE  --  DECLARED AT 08605000
          *08611000**08619500* 08620500
A  --  STREAM VARIABLE  --  DECLARED AT 08659000
          08664000
A  --  STREAM VARIABLE  --  DECLARED AT 08717000
          08720000
A  --  STREAM VARIABLE  --  DECLARED AT 08887100
          08899000
A  --  REAL  --  DECLARED AT 09601000
          09632000  09633000  09633400  09634100  09644000
A  --  STREAM VARIABLE  --  DECLARED AT 09633400
          09633500
A  --  REAL  --  DECLARED AT 09679300
          09679900  09680500  09680800  09681000  09681515  09681545  09681700  09682200
A  --  STREAM VARIABLE  --  DECLARED AT 09681000
          09681100
A  --  STREAM VARIABLE  --  DECLARED AT 09681515
          09681520
A  --  STREAM VARIABLE  --  DECLARED AT 09682200
          09682300
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09700000
          09704000  09704100  09704500  09706000  09706050  09706100  09707000
A  --  STREAM VARIABLE  --  DECLARED AT 12657000
          12661000
A  --  STREAM VARIABLE  --  DECLARED AT 12833000
          12834500
A  --  STREAM VARIABLE  --  DECLARED AT 12892500
          12893000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14342100
A  --  REAL  --  DECLARED AT 14351205
          *14358597* 14358598  14383100
A  --  STREAM VARIABLE  --  DECLARED AT 14383100
          *14383500*
A  --  STREAM VARIABLE  --  DECLARED AT 14535000
          14537200
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14543000
          14551500 *14559200* 14559300  14562000  14569200  14570000  14585300  14585360  14599900  14599910  14600000
          14603000  14603750
```

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A  --  STREAM VARIABLE  --  DECLARED AT 14570000
        14573000
A  --  STREAM VARIABLE  --  DECLARED AT 14603750
A  --  NAME  --  DECLARED AT 14624500
        14702300
A  --  STREAM LABEL  --  DECLARED AT 14702300  --  OCCURS AT 14702400
A  --  STREAM VARIABLE  --  DECLARED AT 15113800
        15114100
A  --  STREAM VARIABLE  --  DECLARED AT 15501600
       *15524000* 15525000
A  --  INTEGER  --  DECLARED AT 15600500
       *15600950**15601000* 15601150  15601200  15601400 *15602200**15602400* 15602500  15602600  15602640  15602680
       *15604100*
A  --  REAL  --  DECLARED AT 16048000
        16048100  16088000 *16105000**16108000* 16109000  16139000 *16149000* 16150000  16187000 *16228000* 16229000
        16234000  16238000
A  --  STREAM VARIABLE  --  DECLARED AT 16088000
        16091000 *16098000*
A  --  STREAM VARIABLE  --  DECLARED AT 16139000
        16142000 *16147000*
A  --  STREAM VARIABLE  --  DECLARED AT 16187000
        16195000
A  --  REAL  --  DECLARED AT 16349000
       *16505100* 16506000  16600000
A  --  STREAM VARIABLE  --  DECLARED AT 16600000
A  --  REAL  --  DECLARED AT 16694500
        16695000  16696800 *16756000* 16769000 *16770000* 16770500  16780500 *16807500* 16810500  16814000 *16815000*
        16816000  16816500  16818000  16827100  16827900  16828100 *16828300* 16829600
A  --  STREAM VARIABLE  --  DECLARED AT 16756000
A  --  STREAM VARIABLE  --  DECLARED AT 16780500
        16781000
A  --  STREAM VARIABLE  --  DECLARED AT 16828100
        16828500 *16828600**16828900**16829100**16829300*
A  --  REAL  --  DECLARED AT 16910000
        16910500
A  --  REAL  --  DECLARED AT 17000800
       *17002000* 17002600  17003000  17003100  17003250
A  --  STREAM VARIABLE  --  DECLARED AT 17003250
        17003500
A  --  REAL  --  NAME PARAMETER  --  DECLARED AT 18002000
        18000000  18013000  18025000  18027000  18031500  18035000
A  --  STREAM VARIABLE  --  DECLARED AT 18013000
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 18156000
        18155000  18156000  18225000  18227500  18255000 *18255200* 18260000  18265000 *18266000* 18273040 *18277000*
       *18283000* 18345000 *18425700* 18438120  18439125  18442000  18443000  18455000  18460000  18465000
A  --  STREAM VARIABLE  --  DECLARED AT 18438120
        18438140
A  --  STREAM VARIABLE  --  DECLARED AT 18455000
        18456000
A  --  REAL ARRAY  --  DECLARED AT 18502400
        18528100  18570000
A  --  STREAM VARIABLE  --  DECLARED AT 18528100
        18528300 *18528600* 18528900
A  --  STREAM VARIABLE  --  DECLARED AT 18570000
        18570300
A  --  REAL ARRAY  --  DECLARED AT 18701900
       *18770100* 18770900 *18780600**18780700**18780800**18780900**18790100**18790200* 18790300  18790400  18790500
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          18790600  18791620 *18810200* 18810300  18820200 *18840200* 18840500  18840700
A  --  STREAM VARIABLE  --  DECLARED AT 18790600
A  --  STREAM VARIABLE  --  DECLARED AT 18791620
A  --  STREAM VARIABLE  --  DECLARED AT 18820200
          18820700  18821400
A  --  REAL ARRAY  --  DECLARED AT 19520000
A  --  STREAM VARIABLE  --  DECLARED AT 19768768
          19768774
A  --  STREAM VARIABLE  --  DECLARED AT 19768900
          *19771000*
A  --  REAL ARRAY  --  DECLARED AT 19900270
          *19900300**19900395**19900745* 19900750 *19900805*
A  --  REAL  --  DECLARED AT 19901500
          *19902190* 19902200 *19903670* 19903700  19903810 *19903830**19904360* 19905100 *19905200*
A  --  STREAM VARIABLE  --  DECLARED AT 20020800
          20021000
A  --  STREAM VARIABLE  --  DECLARED AT 20030800
          20031900
A  --  STREAM VARIABLE  --  DECLARED AT 20043700
          20044200
A  --  STREAM VARIABLE  --  DECLARED AT 20088700
          20088900
A  --  STREAM VARIABLE  --  DECLARED AT 20105900
          20106400
A  --  STREAM VARIABLE  --  DECLARED AT 20172100
          20172300
A  --  STREAM VARIABLE  --  DECLARED AT 20172800
A  --  STREAM VARIABLE  --  DECLARED AT 20194400
          20194600
A  --  STREAM VARIABLE  --  DECLARED AT 20289260
          20289310
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20382015
          20382010  20382062  20382170
A  --  STREAM VARIABLE  --  DECLARED AT 20478520
          20478530
A  --  STREAM VARIABLE  --  DECLARED AT 20498000
          20500000
A  --  STREAM VARIABLE  --  DECLARED AT 20511370
          20511380
A  --  STREAM VARIABLE  --  DECLARED AT 20511660
          20511690
A  --  REAL  --  DECLARED AT 20566100
          20571700
A  --  STREAM VARIABLE  --  DECLARED AT 20571700
          20571720
A  --  REAL  --  DECLARED AT 20581000
          20582750
A  --  STREAM VARIABLE  --  DECLARED AT 20582750
          *20582950*
A  --  REAL  --  DECLARED AT 20584000
A  --  REAL  --  DECLARED AT 20586800
A  --  REAL  --  DECLARED AT 20589800
A  --  REAL  --  DECLARED AT 20591000
A  --  REAL  --  DECLARED AT 20595000
          20595950
A  --  STREAM VARIABLE  --  DECLARED AT 20595950
          20596000
```

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A  --  REAL  --  DECLARED AT 20596800
A  --  REAL  --  DECLARED AT 20600010
A  --  REAL  --  DECLARED AT 20701500
A  --  REAL ARRAY  --  DECLARED AT 22003000
       *22008000**22013000**22014000**22018000**22021000**22022000* 22024500 *22027000* 22029000  22050000
A  --  STREAM VARIABLE  --  DECLARED AT 22069230
       *22069280*
A  --  STREAM VARIABLE  --  DECLARED AT 22115030
A  --  STREAM VARIABLE  --  DECLARED AT 22159000
A  --  STREAM VARIABLE  --  DECLARED AT 22164000
        22165000  22167000
A  --  STREAM VARIABLE  --  DECLARED AT 22181000
        22182000
A  --  STREAM VARIABLE  --  DECLARED AT 22191000
        22192000
A  --  STREAM VARIABLE  --  DECLARED AT 22416000
        22417000
A  --  REAL ARRAY  --  DECLARED AT 22901000
       *22904000* 22907000 *22909000**22910000**22912000**22914000**22915000**22916000**22917000* 22918000  22921000
A  --  STREAM VARIABLE  --  DECLARED AT 24116000
       *24120000*
A  --  STREAM VARIABLE  --  DECLARED AT 24134000
        24136000  24137000 *24138000*
A  --  STREAM VARIABLE  --  DECLARED AT 24158000
        24159000 *24162000*
A  --  STREAM VARIABLE  --  DECLARED AT 28023800
        28024000
A  --  STREAM VARIABLE  --  DECLARED AT 28056400
        28056600
A  --  STREAM VARIABLE  --  DECLARED AT 28065000
        28065200
A  --  STREAM VARIABLE  --  DECLARED AT 28081600
        28081800
A  --  STREAM VARIABLE  --  DECLARED AT 28218400
        28218600
A  --  STREAM VARIABLE  --  DECLARED AT 28255200
        28255400
A  --  STREAM VARIABLE  --  DECLARED AT 28263400
A  --  STREAM VARIABLE  --  DECLARED AT 28276600
       *28277000*
A  --  STREAM VARIABLE  --  DECLARED AT 28297800
        28298200
A  --  STREAM VARIABLE  --  DECLARED AT 28418400
        28418600
A  --  STREAM VARIABLE  --  DECLARED AT 28444200
        28444400 *28445000* 28445400
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
        32000000  32000810  32001700
A  --  STREAM VARIABLE  --  DECLARED AT 32000810
        32001180
A  --  STREAM VARIABLE  --  DECLARED AT 32001700
        32001800
A  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 36001000
        36006000
A  --  STREAM VARIABLE  --  DECLARED AT 37036400
        37036800
A  --  STREAM VARIABLE  --  DECLARED AT 37046192
```

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          37046215
A  --   REAL  --  DECLARED AT 37180100
          37221320 *37221340* 37221400
A  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 37286200
          37286000  37286100  37288000  37289000
A  --   REAL ARRAY  --  DECLARED AT 37504000
          *37508000* 37509000 *37521000**37535000**37538000* 37542000  37543000  37545000
A  --   STREAM VARIABLE  --  DECLARED AT 38159500
          38160500
A  --   STREAM VARIABLE  --  DECLARED AT 38281000
A  --   STREAM VARIABLE  --  DECLARED AT 38603000
          38604000
A  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 39900000
          39945000  39960000  39968000
A  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 40002000
          40000000  40001000  40255000  40257030  40258000  40261300  40275300  40278150  40292212  40317800  40322600
          40324500  40332000  40334057  40356800
A  --   STREAM VARIABLE  --  DECLARED AT 40261300
          40261350
A  --   STREAM VARIABLE  --  DECLARED AT 40278150
A  --   STREAM VARIABLE  --  DECLARED AT 40292212
          40292214
A  --   STREAM VARIABLE  --  DECLARED AT 41320360
          41320380
A  --   STREAM VARIABLE  --  DECLARED AT 41320600
          41320800
A  --   STREAM VARIABLE  --  DECLARED AT 41322500
          41322700
A  --   STREAM VARIABLE  --  DECLARED AT 41324800
          41324900
A  --   REAL  --  DECLARED AT 41327500
          *41328400**41328600* 41328700  41328900  41330500  41332400  41332700  41333005  41333600  41335000
A  --   STREAM VARIABLE  --  DECLARED AT 41333005
          41333015 *41333020**41333030*
A  --   STREAM VARIABLE  --  DECLARED AT 41500800
          41501200
A  --   REAL  --  DECLARED AT 41600300
          *41602200* 41602400  41602500  41602600 *41602900* 41603000  41603100  41607200  41607300  41607500
A  --   REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 42474000
          *42476100* 42477000  42478000  42478200  42479000
A  --   NAME  --  DECLARED AT 42515000
          *42524200* 42525500  42526000  42527000
A  --   REAL  --  DECLARED AT 44011000
          44014000 *44037000* 44181000 *44202500* 44202600  44202700  44202800  44202900  44203150
A  --   STREAM VARIABLE  --  DECLARED AT 44181000
A  --   REAL  --  DECLARED AT 44206700
          44209100  44213000  44240500  44242000  44243000  44246000  44254000  44256150  44256250  44256300  44261500
          44264500  44266500  44280000
A  --   STREAM VARIABLE  --  DECLARED AT 44240500
          44240520
A  --   REAL  --  DECLARED AT 45002000
          45092140  45092210  45092250  45092280  45092340  45094200  45094400  45116000  45143000
A  --   STREAM VARIABLE  --  DECLARED AT 45092140
          45092150  45092160
A  --   STREAM VARIABLE  --  DECLARED AT 45116000
          45117000
A  --   STREAM VARIABLE  --  DECLARED AT 48075000
```

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        48077000
AA  --  STREAM VARIABLE  --  DECLARED AT 02173150
        02173160
AA  --  STREAM VARIABLE  --  DECLARED AT 02173300
        02173306 *02173325* 02173330
AA  --  REAL  --  DECLARED AT 04704000
       *04711000* 04722000  04723000 *04726000* 04731000
AA  --  REAL  --  DECLARED AT 40005220
       *40275200* 40317800
AA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 44008999
        44008998  44008999
AA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 45000000
AAA  --  REAL  --  DECLARED AT 40005220
       *40275200* 40278000  40311100 *40311200* 40311300
AB  --  STREAM LABEL  --  DECLARED AT 12882000  --  OCCURS AT 12884000
ABN  --  LABEL  --  DECLARED AT 14629000
ABORT  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13083000
        13058000
ABORT  --  REAL  --  DECLARED AT 20566100
ABORT  --  REAL  --  DECLARED AT 20581000
ABORT  --  REAL  --  DECLARED AT 20584000
ABORT  --  REAL  --  DECLARED AT 20586800
ABORT  --  REAL  --  DECLARED AT 20589800
ABORT  --  REAL  --  DECLARED AT 20591000
ABORT  --  REAL  --  DECLARED AT 20595000
ABORT  --  REAL  --  DECLARED AT 20596800
ABORT  --  REAL  --  DECLARED AT 20600010
       *20600150* 20600390 *20600500**20608130* 20608710 *20608750*
ABORT  --  REAL  --  DECLARED AT 20701500
ABORT  --  SUBROUTINE  --  DECLARED AT 28011600
        28022200  28028100  28036200  28041600  28043000  28046400  28061800  28065600  28068000  28073000  28084100
        28086200  28089600  28091200  28095600  28097200  28100200
ABORT  --  DEFINE  --  DECLARED AT 28207600
        28216800  28225200  28230400  28232800  28242200  28254600  28258700  28268000  28270824  28271000  28285400
        28295800  28303600
ABORT  --  DEFINE  --  DECLARED AT 28406800
        28467400  28472800  28476200
ABORT  --  SUBROUTINE  --  DECLARED AT 28817000
        28849000  28852200  28863000  28882000
ABORTABLE  --  DEFINE  --  DECLARED AT 00080900
ABORTED  --  REAL  --  DECLARED AT 12505500
        12507000 *12564500**12686000**12687400* 12694800  12741500
ABORTED  --  REAL  --  DECLARED AT 12805500
        12807000 *12880000*
ABORTED  --  REAL  --  DECLARED AT 13007000
        13056000
ABORTMASK  --  DEFINE  --  DECLARED AT 00080900
        22009000  22010000  22030000  22905000  22906000  22920000  40336100  45102000
ABORTMSG  --  LABEL  --  DECLARED AT 12813000  --  OCCURS AT 12879500
        12814000
ABORTMSG  --  DEFINE  --  DECLARED AT 13028000
        13083000  13115000
ABSEVT  --  REAL  --  DECLARED AT 14351210
       *14358580* 14358582 *14358584* 14358586  14358588  14358590  14358605
ABSEVT  --  REAL  --  DECLARED AT 19901300
        19902850  19902860  19902900  19903200  19903500  19903600  19903650  19903660  19903670  19903700  19903825
        19903850  19903865  19905360
```

```
ABSOLD  --  REAL  --  DECLARED AT 19901500
       *19902000* 19902100 *19902120* 19902130  19902140  19902360
AC  --  SWITCH LABEL  --  DECLARED AT 18501700
AC  --  SWITCH LABEL  --  DECLARED AT 19518000
ACCEPT  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22163000
ACCESS  --  INTEGER  --  DECLARED AT 38009000
       38045200  38045300
ACCESS  --  INTEGER  --  DECLARED AT 38102900
ACCESS  --  INTEGER  --  DECLARED AT 38200900
ACCESS  --  REAL  --  DECLARED AT 38366010
       *38388000* 38389400  38391010 *38391025**38391060* 38391080 *38391100* 38393000  38396000  38411100  38411200
       *38411400**38411600* 38411700 *38411900*
ACCESS  --  REAL  --  DECLARED AT 38561000
ACCESS  --  REAL  --  DECLARED AT 38658000
ACCESS  --  INTEGER  --  DECLARED AT 39006000
       *39247000**39250000**39256000* 39306000
ACCESS  --  REAL  --  DECLARED AT 41017000
ACCESSD  --  DEFINE  --  DECLARED AT 20228400
       20569730  20714000
ACCESSD  --  DEFINE  --  DECLARED AT 28404000
       28417800
ACCUM  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20314300
       20314000  20328000  20363000 *20368100*
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20328000
       20330000
ACCUM  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20386100
       20384000  20397200  20411000  20415100  20418000  20421000  20427000  20433000  20439000  20478520  20484300
       20498000
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20411000
       20414000
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20427000
       20428000
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20433000
       20434000
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20439000
       20440000
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20478520
       20478530
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20484300
       20484400
ACCUM  --  REAL ARRAY  --  DECLARED AT 20566100
       20566900  20566915  20567065  20567105  20567160  20567270  20569845  20569850  20569940  20569970  20570160
       20570220  20570460  20573410  20573440  20577050
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20566915
       20566925
ACCUM  --  REAL ARRAY  --  DECLARED AT 20581000
ACCUM  --  REAL ARRAY  --  DECLARED AT 20584000
       20584200  20584400  20584550  20585360  20585370  20585450
ACCUM  --  REAL ARRAY  --  DECLARED AT 20586800
       20587100
ACCUM  --  REAL ARRAY  --  DECLARED AT 20589800
       20590000  20590050  20590450  20590600  20590660  20590680  20590700
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20590660
       20590665
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20590680
       20590685
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20590700
```

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        20590705
ACCUM  --  REAL ARRAY  --  DECLARED AT 20591000
        20591400  20591800  20591900  20593200  20593310
ACCUM  --  REAL ARRAY  --  DECLARED AT 20595000
        20596300  20596350
ACCUM  --  REAL ARRAY  --  DECLARED AT 20596800
ACCUM  --  REAL ARRAY  --  DECLARED AT 20600010
        20600040 *20601500**20601550* 20604300  20604500  20604850  20605050  20605360  20605400  20605810  20607020
        20610300
ACCUM  --  STREAM VARIABLE  --  DECLARED AT 20607020
        20607220
ACCUM  --  REAL ARRAY  --  DECLARED AT 20701500
        20706000  20717000  20720000
ACTDATE  --  REAL  --  DECLARED AT 08303100
        08333000  08571800  18711500  20289265  41320360 *44241150*
ACTDATE  --  STREAM VARIABLE  --  DECLARED AT 20289265
        20289295
ACTSPACE  --  INTEGER PROCEDURE  --  DECLARED AT 24032050
       *24035200**24039900* 24042100  24043600
ACTUALDISKADDRESS  --  DEFINE  --  DECLARED AT 20019900
        20050000  20059400
ACTUALDISKADDRESS  --  DEFINE  --  DECLARED AT 20086400
        20121800  20125000
ACTUALIOERR  --  PROCEDURE  --  DECLARED AT 04353200  --  FORWARD AT 04121425
        48126430
ACTUALOVERLAYADDRESS  --  INTEGER PROCEDURE  --  DECLARED AT 14105000  --  FORWARD AT 02697750
        14203000  14292100  22331400
AC0  --  LABEL  --  DECLARED AT 18501100
        18501700
AC0  --  LABEL  --  DECLARED AT 19517000
        19518000
AC1  --  LABEL  --  DECLARED AT 18501100
        18501700
AC1  --  LABEL  --  DECLARED AT 19517000
        19518000
AC2  --  LABEL  --  DECLARED AT 18501100
        18501700
AC2  --  LABEL  --  DECLARED AT 19517000
        19518000
AC3  --  LABEL  --  DECLARED AT 18501100
        18501700
AC3  --  LABEL  --  DECLARED AT 19517000
        19518000
AC4  --  LABEL  --  DECLARED AT 18501100
        18501700
AC4  --  LABEL  --  DECLARED AT 19517000
        19518000
AC5  --  LABEL  --  DECLARED AT 18501100
        18501700
AC5  --  LABEL  --  DECLARED AT 19517000
        19518000
AD  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18711500
        18701200
AD  --  REAL  --  DECLARED AT 40004500
        40027290  40027295  40047000  40047100  40078054  40078058 *40322220* 40322400  40323200 *40323300*
ADDR  --  NAME  --  DECLARED AT 16912000
        16912100
```

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ADDR  --  NAME  --  DECLARED AT 18702000
        *18840700* 18840800  18840900  18841000  18841600  18843400
ADDR  --  NAME  --  DECLARED AT 19522000
ADDR  --  INTEGER  --  DECLARED AT 19696000
        *19711300**19762000* 19766300
ADDR  --  NAME  --  DECLARED AT 20014300
        20014400
ADDR  --  NAME  --  DECLARED AT 20083500
        20083600
ADDR  --  NAME  --  DECLARED AT 20143900
        20144000
ADDR  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20386000
        20384000 *20400000* 20404000 *20405000*
ADDR  --  NAME  --  DECLARED AT 20566100
ADDR  --  NAME  --  DECLARED AT 20581000
ADDR  --  NAME  --  DECLARED AT 20584000
ADDR  --  NAME  --  DECLARED AT 20586800
ADDR  --  NAME  --  DECLARED AT 20589800
ADDR  --  NAME  --  DECLARED AT 20591000
ADDR  --  NAME  --  DECLARED AT 20595000
ADDR  --  NAME  --  DECLARED AT 20596800
ADDR  --  NAME  --  DECLARED AT 20600010
ADDR  --  NAME  --  DECLARED AT 20701500
ADDR  --  NAME  --  DECLARED AT 31004000
        31005000 *31010000**31017000**31017100**31017200**31018000**31019000**31020000* 31022000
ADDRESS  --  NAME  --  VALUE PARAMETER  --  DECLARED AT 00021000
        00020000
ADDRESS  --  NAME  --  VALUE PARAMETER  --  DECLARED AT 02002500
        02000000  02001000  02008100
ADDRESS  --  DEFINE  --  DECLARED AT 40008160
        40039000  40060300  40060305
ADDRS  --  REAL  --  DECLARED AT 14342000
        *14353000* 14357000
ADDV  --  DEFINE  --  DECLARED AT 20224000
        20569528  20569770
ADDV  --  DEFINE  --  DECLARED AT 28208000
        28270810  28281600  28281800  28282600  28285800
ADECK  --  REAL  --  DECLARED AT 07008200
        07039410 *07108100**07118690* 07139510  07139520
ADR  --  REAL  --  DECLARED AT 02190000
        *02209000* 02210000  02211010 *02212000* 02215000 *02217000* 02217100 *02275100* 02275200  02276260  02276270
        *02276500**02276550**02292000**02294000* 02295000  02308000
ADR  --  STREAM VARIABLE  --  DECLARED AT 02295000
ADR  --  REAL  --  DECLARED AT 07003410
        *07003430**07003440* 07003450  07003462
ADR  --  REAL SUBROUTINE  --  DECLARED AT 07042000
        07047000  07144000  07165000  07175000
ADR  --  REAL  --  DECLARED AT 16698210
        *16851200* 16851500  16851900 *16852100* 16852800 *16854400* 16854600
ADR  --  STREAM VARIABLE  --  DECLARED AT 16854600
ADR  --  INTEGER  --  DECLARED AT 30904000
        *30910000* 30912000  30913000 *30916000* 30920000
ADR  --  STREAM VARIABLE  --  DECLARED AT 30920000
ADR  --  REAL  --  DECLARED AT 31005000
        *31005300* 31005330  31005350  31010000  31013000  31017200
AG  --  STREAM LABEL  --  DECLARED AT 28421800  --  OCCURS AT 28422200
        28422800  28423200
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AGAIN  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06110400
        06112300  06112800  06113200
AGAIN  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07107000
        07129300
AGAIN  --  LABEL  --  DECLARED AT 07425500  --  OCCURS AT 07427500
        07450200
AGAIN  --  LABEL  --  DECLARED AT 08419000  --  OCCURS AT 08420000
        08438250
AGAIN  --  LABEL  --  DECLARED AT 08576100  --  OCCURS AT 08577700
        08597750
AGAIN  --  LABEL  --  DECLARED AT 22236100  --  OCCURS AT 22286050
        22286180
AGAIN  --  STREAM LABEL  --  DECLARED AT 28411400  --  OCCURS AT 28411800
        28412600  28413200
AGAIN  --  LABEL  --  DECLARED AT 37505000  --  OCCURS AT 37523000
        37530000
AGAIN  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38608200
        38608700
AGN  --  STREAM LABEL  --  DECLARED AT 20600440  --  OCCURS AT 20600450
AGN  --  LABEL  --  DECLARED AT 38009100  --  OCCURS AT 38014400
        38015500
AGN  --  LABEL  --  DECLARED AT 39056500
AIT  --  REAL ARRAY  --  DECLARED AT 14162500
       *14218040*  14218050  14218055  *14218065*  14218072  14218078  14218080  *14218082*  14218084  *14218086**14218088*
AIT  --  REAL ARRAY  --  DECLARED AT 18701900
       *18720300*  18720400  18720600  18720700  *18720800*
AIT  --  REAL ARRAY  --  DECLARED AT 19520000
        19521000  *19685015**19685020*  19685065
AIT  --  REAL ARRAY  --  DECLARED AT 31003000
       *31007000*  31009000  31010000
AIT  --  REAL ARRAY  --  DECLARED AT 42482000
       *42485000*  42487000  42488000  42489000  *42505000*  42506200  42506300  42506400  42507000
AITL  --  REAL  --  DECLARED AT 18701900
        18720200  *18844500**18845200*  18845400
AITL  --  REAL  --  DECLARED AT 19520000
AITNDX  --  DEFINE  --  DECLARED AT 00067050
        14218040  14218045  14218065  14358320  14358325  31007000  31008000  42485000  42486000
ALFA  --  DEFINE  --  DECLARED AT 04670700
        04674300  04675800  04679550  04680850
ALGOL  --  DEFINE  --  DECLARED AT 20234000
        20585200  20585355  20604500
ALGOLFIBAREAV  --  DEFINE  --  DECLARED AT 00017230
ALOC  --  REAL  --  DECLARED AT 42514000
       *42535000*  42535500  42539000  42539050
ALPHA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08700000
        08709600  08726000
ALPHA  --  REAL  --  DECLARED AT 37388400
        37388500  37404000  37406000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38000000
        38027000  38028000  38041100  38043000  38053500  38054000  38073000  38081000  38082000  38082400  38083000
        38090000  38092000  38093000  38094000
ALPHA  --  STREAM VARIABLE  --  DECLARED AT 38083000
        38084000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38102000
        38107000  38109000  38116500  38121000  38129500  38147500  38152000  38164500
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38200000
        38205000  38238000  38243500  38246500  38248000  38270500  38271500  38275500  38278000  38280000  38280500
```

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        38281000  38283500  38284000  38284500  38285000  38286000  38287000  38287500  38288000  38290000  38292000
        38297500
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38355000
        38371000  38372000  38374000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38540000
        38554000  38555000  38557000  38571000  38574000  38575000  38583000  38584000  38587000  38588000  38590000
        38590200  38592000  38592100  38593000  38594100  38594200  38628000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 38648000
        38667000  38668000  38670000  38683000  38700000  38701000  38707000  38711000  38720000  38726000  38732100
        38736000  38742000  38762000  38766000  38803000  38804000  38807000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 39000100
        39000000  39000100  39032000  39042100  39043000  39046000  39083000  39092030  39144000  39145210  39145300
        39147000  39230000  39233300  39233500  39244000  39293400  39305000
ALPHA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 41000000
        41038000 *41039000* 41040000  41051300  41051620  41201000  41202000  41208000  41210000  41212200
ALWAYSBIT  --  DEFINE  --  DECLARED AT 00417100
ANALYSIS  --  REAL PROCEDURE  --  DECLARED AT 14000000  --  FORWARD AT 02111400
       *14078000* 14079000  42522000  42538000  48109000
ANS  --  STREAM VARIABLE  --  DECLARED AT 08804000
        08822000  08823000
ANVIL  --  REAL PROCEDURE  --  DECLARED AT 08546000
        16082000
AQ  --  STREAM LABEL  --  DECLARED AT 07295102  --  OCCURS AT 07295160
ARD  --  LABEL  --  DECLARED AT 28806000  --  OCCURS AT 28889550
        28882100  28882160
AREA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 01250200
        01250100  01250200  01251100  01251800  01252600  01254000  01255200  01256100  01258700  01258900  01261300
AREA  --  STREAM VARIABLE  --  DECLARED AT 01251100
        01251200  01251400
AREA  --  STREAM VARIABLE  --  DECLARED AT 01251800
        01252000
AREA  --  STREAM VARIABLE  --  DECLARED AT 01252600
        01252700
AREA  --  STREAM VARIABLE  --  DECLARED AT 01254000
AREA  --  REAL  --  DECLARED AT 04259200
AREA  --  REAL ARRAY  --  DECLARED AT 22061000
        22061100 *22069000* 22107000  22112000  22115030  22115070  22119000  22124000  22129000  22136000  22145050
        22145550  22156000  22157000  22159000  22164000  22179000  22180000  22181000  22191100  22196000  22225000
AREA  --  STREAM VARIABLE  --  DECLARED AT 22119000
AREA  --  STREAM VARIABLE  --  DECLARED AT 22129000
AREA  --  STREAM VARIABLE  --  DECLARED AT 22136000
        22138000 *22140000* 22142000
AREA  --  STREAM VARIABLE  --  DECLARED AT 22145050
        22145150 *22145250* 22145350
AREA  --  STREAM VARIABLE  --  DECLARED AT 22191100
AREAAVAILF  --  FIELD  --  DECLARED AT 00017780
AREABACKLINKF  --  FIELD  --  DECLARED AT 00017820
AREAFWDLINKF  --  FIELD  --  DECLARED AT 00017830
        14364800
AREAMIXF  --  FIELD  --  DECLARED AT 00017810
        08275600  14364200  14364500  18520600  20059120  20089820  20176048  22297000  28435010  38121500  38148000
AREASAVEF  --  FIELD  --  DECLARED AT 00017790
AREATYPEF  --  FIELD  --  DECLARED AT 00017800
        02142100  02216000  14364300  16853000  22303000  22386000  22386100  38121500  38148000
ARN  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04686550
        04686750
AROUND  --  LABEL  --  DECLARED AT 14165000  --  OCCURS AT 14223000
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        14197000  14199000
AROUND  --  LABEL  --  DECLARED AT 17902500  --  OCCURS AT 17906500
        17917500  17918500
AROUND  --  LABEL  --  DECLARED AT 22236000  --  OCCURS AT 22265000
        22284000
AROUND  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37045000
        37043000
AROW  --  REAL ARRAY  --  DECLARED AT 28004400
       *28069400**28069600**28069800* 28090400  28091200
AROW  --  REAL ARRAY  --  DECLARED AT 28204800
        28205000  28235400  28237200  28243400  28273000  28273400  28276000
ARRAYDESC  --  DEFINE  --  DECLARED AT 00017020
        20059120  20089820  20176048  28451800  28855000
ARTN  --  PROCEDURE  --  DECLARED AT 42474000  --  FORWARD AT 00431000
        18720100  18810100  18850100  42477000  42480000  42501900
AS  --  DEFINE  --  DECLARED AT 20247980
        20570100
ASFID  --  REAL  --  DECLARED AT 28000800
        28001000
ASFID  --  REAL  --  DECLARED AT 28400600
       *28425600**28426200* 28430800
ASIT  --  SUBROUTINE  --  DECLARED AT 28424600
        28470200  28474200  28478600
ASIZE  --  DEFINE  --  DECLARED AT 06070600
        06088300  06089000  06097100  06100800  06101100  06110800  06110900  06111700
ASMFID  --  REAL  --  DECLARED AT 28000800
ASMFID  --  REAL  --  DECLARED AT 28400600
       *28425200**28426000* 28427800  28430600
ASR  --  PROCEDURE  --  DECLARED AT 42482000  --  FORWARD AT 00474000
        14360300  19566000  31016000  42508000
ATLEASTONE  --  REAL  --  DECLARED AT 08853000
       *08884000* 08886000 *08902000* 08904000
ATTACHL  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19902800
        19901700
AU  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16771500
        16704000
AUT  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12594500
        12592500
AUTODS  --  DEFINE  --  DECLARED AT 00416995
        06360515  06463260  14581500  17914100  18540120  36006500  37046735  37225800
AUTOLOADER  --  SUBROUTINE  --  DECLARED AT 22069010
        22069600  22209600
AUTOMESS  --  DEFINE  --  DECLARED AT 00416992
        20100900  20174400
AUTOPRINT  --  DEFINE  --  DECLARED AT 00412000
        07419200  08258800  12753000  20152200  22206000  38609100
AUTORN  --  DEFINE  --  DECLARED AT 00416710
        44280100
AUTOSTOP  --  REAL  --  DECLARED AT 17903500
       *17904000* 17908000  17917000
AUTOSTOP  --  STREAM VARIABLE  --  DECLARED AT 17908000
        17910500
AUTOUNLD  --  DEFINE  --  DECLARED AT 00416630
        06353580  06353590
AUX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00367000
        00365000  00366000
AUX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24103000
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          24101000  24102000
AV  --  INTEGER  --  DECLARED AT 06069100
          06069200  06088300  06091500  06099400  06099500  06100800  06100900 *06111300*
AVAIL  --  INTEGER  --  DECLARED AT 00069000
          24023000  24024000  24027000  24036300 *44102000* 44103000  44106000 *44107000* 44111000  44112000  44201400
AVAILABLE  --  DEFINE  --  DECLARED AT 40008120
          40041000  40046000  40057000  40078058
AVBLOCK  --  DEFINE  --  DECLARED AT 40008220
          40322600  40325000  40332000
AVDIFFMAX  --  DEFINE  --  DECLARED AT 05780400
          05852100  05852200  40329000
AVDIFFMIN  --  DEFINE  --  DECLARED AT 05780400
          06380600  40328000
AVLP  --  LABEL  --  DECLARED AT 44020000  --  OCCURS AT 44103000
          44108000
AVS  --  INTEGER  --  DECLARED AT 05841615
         *05844920**05844925* 05844930  05846360
AVS  --  INTEGER  --  DECLARED AT 05847600
         *05850110* 05850120  05853425
AVS  --  INTEGER  --  DECLARED AT 05952400
          05952500 *05961200* 05961400  05975600
AVS  --  DEFINE  --  DECLARED AT 06351105
          06381250
AVSIZE  --  INTEGER  --  DECLARED AT 06069200
         *06109300* 06109400  06110300  06114300
AVSMAX  --  DEFINE  --  DECLARED AT 05780600
AVSMIN  --  DEFINE  --  DECLARED AT 05780600
AVTABLE  --  REAL ARRAY  --  DECLARED AT 00166006
          05842475  05842700  05843000  05844920  05844935 *05845400**05845700**05848255* 05849420  05849460  05849500
          05850200  05850300 *05852700* 05961000  05961800  05962000 *05971800**05974000* 05974200 *05975000**06101200*
          06108000  06108300 *06380100* 06380150  06380250  06380550  06381070  06381300  06381320  16826600  16828100
          16828200  40321130  41324800 *44240920*
AVTABLEAREAV  --  DEFINE  --  DECLARED AT 00017500
          44240840
AVTMAX  --  DEFINE  --  DECLARED AT 05780500
          06380650
AV1  --  DEFINE  --  DECLARED AT 40008220
          40322470  40322600  40324300  40324500  40330000  40332000  40333000  40334057
AWAKEN  --  REAL SUBROUTINE  --  DECLARED AT 22237000
          22246000  22320100  22325410  22332000  22336200  22356000  22356400  22364000  22365400  22383100  22411000
          22429000
AWAY  --  LABEL  --  DECLARED AT 08419000  --  OCCURS AT 08438300
          08429000
AX  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16078000
          16062000
AXET  --  STREAM LABEL  --  DECLARED AT 16956060  --  OCCURS AT 16956070
AZ  --  LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05852000
          05851500
AZ  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05970800
          05962700  06078600
A1  --  REAL  --  DECLARED AT 06068600  --  OCCURS AT 06078500
          06080800  06091800 *06107200* 06114900
A1  --  STREAM LABEL  --  DECLARED AT 06080800  --  OCCURS AT 06082200
          06081100
A2  --  REAL  --  DECLARED AT 06068600
          06086800  06087900  06095200  06095300 *06095400* 06096700 *06107200* 06114900
A3  --  REAL  --  DECLARED AT 06068600
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          06098400  06098700 *06107300* 06107400  06114900
A4  --  REAL  --  DECLARED AT 06068600
          06086300  06086400  06089900  06090000  06097000 *06103900* 06115600
A4  --  REAL ARRAY  --  DECLARED AT 18500300
          18520100  18520800  18521000  18530100  18540100  18540600  18552400  18552600  18552700 *18553100* 18553400
         *18553500**18553700**18553800**18554000* 18554600 *18554700**18554800**18555000**18555100* 18555700  18555800
         *18556200**18556300**18556400**18556500**18556800**18557100*
A4  --  STREAM VARIABLE  --  DECLARED AT 18521000
          18521100  18521500
A4  --  REAL ARRAY  --  DECLARED AT 18700300
          18840100  18840200  18844200
A4  --  REAL ARRAY  --  DECLARED AT 19503000
         *19590000* 19592000
A5  --  REAL  --  DECLARED AT 06068600
          06068700 *06077500* 06077600  06084600  06115600
A5  --  REAL ARRAY  --  DECLARED AT 18500300
          18580100  18580200 *18580300* 18580410 *18580500**18580600**18580700*
A5  --  REAL ARRAY  --  DECLARED AT 18700300
          18740100  18740200  18740300  18740400  18740900  18741000  18741100 *18770100* 18770200  18770900  18810100
          18810200  18810300
A5  --  REAL ARRAY  --  DECLARED AT 19302000
          19303000
A5  --  REAL ARRAY  --  DECLARED AT 19503000
          19569000  19571000  19574000  19575000 *19576600*
A6  --  REAL ARRAY  --  DECLARED AT 18500300
          18503400  18559000
A6  --  REAL ARRAY  --  DECLARED AT 18700300
A6  --  REAL ARRAY  --  DECLARED AT 19503000
A7  --  REAL ARRAY  --  DECLARED AT 18500400
A7  --  REAL ARRAY  --  DECLARED AT 18700400
A7  --  REAL ARRAY  --  DECLARED AT 19504000
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00089100
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
          00379600
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00429000
          00428000
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00463300
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00480100
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02021000
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02052800
          02052700
B   --  REAL  --  NAME PARAMETER  --  DECLARED AT 02178500
B   --  NAME  --  DECLARED AT 02191000
         *02207000* 02216510 *02218000* 02219000  02223000  02253050  02255000
B   --  STREAM VARIABLE  --  DECLARED AT 02255000
          02255100
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02379000
B   --  STREAM VARIABLE  --  DECLARED AT 02385000
B   --  REAL  --  DECLARED AT 02434120
          02434170  02434270 *02434320* 02434330  02434630  02434850
B   --  STREAM VARIABLE  --  DECLARED AT 02434170
B   --  STREAM VARIABLE  --  DECLARED AT 02434270
B   --  STREAM VARIABLE  --  DECLARED AT 02434330
          02434350  02434360
B   --  REAL  --  NAME PARAMETER  --  DECLARED AT 02696700
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121600
B   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121650
```

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B  --  STREAM VARIABLE  --  DECLARED AT 04213000
        04214000
B  --  STREAM VARIABLE  --  DECLARED AT 04271800
B  --  STREAM VARIABLE  --  DECLARED AT 04371930
B  --  STREAM VARIABLE  --  DECLARED AT 04398400
        04398800
B  --  REAL ARRAY  --  DECLARED AT 04703000
       *04707000* 04711000  04725000  04732000  04736000
B  --  INTEGER  --  DECLARED AT 05702000
       *05703000* 05704000  05722000  05724000 *05727000* 05728000
B  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05842700
        05843200
B  --  INTEGER  --  DECLARED AT 05847700
       *05850120* 05853425
B  --  REAL  --  DECLARED AT 05951200
        05951400  05952210  05953000 *05953070* 05953130  05953140  05953210  05953220  05953350  05953400  05956300
       *05961400* 05964000 *05967900**05968200* 05968400 *05969200* 05975600 *05979340*
B  --  STREAM VARIABLE  --  DECLARED AT 05953000
        05953015 *05953025*
B  --  STREAM VARIABLE  --  DECLARED AT 05953140
        05953155
B  --  STREAM VARIABLE  --  DECLARED AT 05964000
B  --  REAL  --  DECLARED AT 06068300
        06074100  06078000 *06092500* 06092600 *06097100* 06097300  06097400  06098300  06098700
B  --  STREAM VARIABLE  --  DECLARED AT 06074100
        06074900  06075200  06075400 *06076000* 06076100  06076500
B  --  STREAM VARIABLE  --  DECLARED AT 06078000
        06081600
B  --  STREAM VARIABLE  --  DECLARED AT 06098700
B  --  STREAM VARIABLE  --  DECLARED AT 06196000
B  --  STREAM VARIABLE  --  DECLARED AT 06206140
        06206175
B  --  STREAM VARIABLE  --  DECLARED AT 06234000
B  --  INTEGER  --  DECLARED AT 06351250
       *06380525* 06380550  06380750  06380800  06381250
B  --  STREAM VARIABLE  --  DECLARED AT 07179260
        07179270
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07268100
        07268000  07268100  07271900
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07354000
        07357000  07358000  07369000
B  --  STREAM VARIABLE  --  DECLARED AT 07358000
        07359000 *07360200**07367000*
B  --  REAL  --  DECLARED AT 07386000
       *07389000* 07391000  07392000  07393000  07400000  07402000  07404000
B  --  STREAM VARIABLE  --  DECLARED AT 07393000
        07394000
B  --  REAL  --  DECLARED AT 07408000
       *07412000* 07413000  07414000  07418500
B  --  STREAM VARIABLE  --  DECLARED AT 07418500
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07457000
        07461000 *07461570* 07461800  07463000  07468100
B  --  STREAM VARIABLE  --  DECLARED AT 07461000
        07461100
B  --  STREAM VARIABLE  --  DECLARED AT 07463000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07473100
        07475000 *07476000* 07479100  07480000  07483000
```

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B  --  REAL  --  DECLARED AT 07486000
       *07487000* 07488000
B  --  STREAM VARIABLE  --  DECLARED AT 07488000
        07489000 *07491000**07494000*
B  --  STREAM VARIABLE  --  DECLARED AT 07549000
B  --  STREAM VARIABLE  --  DECLARED AT 08029015
        08029020 *08029045*
B  --  STREAM VARIABLE  --  DECLARED AT 08051000
        08051004
B  --  STREAM VARIABLE  --  DECLARED AT 08051010
        08051050
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08070000
B  --  STREAM VARIABLE  --  DECLARED AT 08110350
B  --  STREAM VARIABLE  --  DECLARED AT 08112150
        08112350
B  --  STREAM VARIABLE  --  DECLARED AT 08179600
B  --  REAL  --  DECLARED AT 08283000
        08285000  08292000
B  --  STREAM VARIABLE  --  DECLARED AT 08285000
        08286000 *08289000**08290000* 08290500 *08291125**08291225* 08305000  08310000  08315000
B  --  STREAM VARIABLE  --  DECLARED AT 08310000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08317000
        08333000  08340000
B  --  STREAM VARIABLE  --  DECLARED AT 08333000
        08334700 *08334900* 08335000  08335600  08337500 *08338000*
B  --  REAL  --  DECLARED AT 08344000
        08344200 *08359000*
B  --  STREAM VARIABLE  --  DECLARED AT 08344200
        08346000 *08354000**08355000* 08356000
B  --  REAL  --  DECLARED AT 08377000
       *08380000* 08381000  08381100  08383000  08383100  08384000  08387000
B  --  REAL  --  DECLARED AT 08391000
        08397000
B  --  STREAM VARIABLE  --  DECLARED AT 08397000
        08398000 *08405000*
B  --  REAL  --  DECLARED AT 08418500
       *08424000* 08428000 *08433000**08434000* 08435000  08436000  08437000 *08437200* 08437450
B  --  STREAM VARIABLE  --  DECLARED AT 08424000
B  --  STREAM VARIABLE  --  DECLARED AT 08437200
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08438900
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08439000
        08440000  08444000  08448050  08451100  08480000 *08481000* 08482050  08483000 *08484000* 08484500  08488000
       *08494000**08498000* 08501000  08502000  08507000
B  --  STREAM VARIABLE  --  DECLARED AT 08444000
B  --  STREAM VARIABLE  --  DECLARED AT 08448050
        08448110
B  --  STREAM VARIABLE  --  DECLARED AT 08451100
        08451210
B  --  STREAM VARIABLE  --  DECLARED AT 08488000
        08489000
B  --  STREAM VARIABLE  --  DECLARED AT 08502000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08527000
        08525000  08526000  08540000  08544700
B  --  STREAM VARIABLE  --  DECLARED AT 08540000
B  --  REAL  --  DECLARED AT 08547000
        08548000
B  --  STREAM VARIABLE  --  DECLARED AT 08572520
```

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          08572540
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08575000
          08576000  08577000  08577100 *08577600*
B  --  STREAM VARIABLE  --  DECLARED AT 08577100
          08577200 *08577400*
B  --  REAL  --  DECLARED AT 08601000
          *08604000* 08604100  08605000  08621600
B  --  STREAM VARIABLE  --  DECLARED AT 08605000
          08615000
B  --  REAL  --  DECLARED AT 08626000
          *08629000* 08630000  08671000  08673000  08676000
B  --  REAL  --  DECLARED AT 08801000
          *08802500* 08804000 *08831000* 08832000  08833000  08834000  08835000
B  --  STREAM VARIABLE  --  DECLARED AT 08804000
          08805000  08823000
B  --  REAL  --  DECLARED AT 09601000
          09632000  09633000  09633400  09634100  09645000  09670000
B  --  STREAM VARIABLE  --  DECLARED AT 09633400
B  --  STREAM VARIABLE  --  DECLARED AT 09670000
B  --  REAL  --  DECLARED AT 09679300
          09679900  09680600  09680800  09681545  09681800
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09700000
          09703000  09705000  09708000
B  --  REAL  --  DECLARED AT 12503500
          12504000 *12521500* 12522500  12545500  12546500  12547000  12550000  12607000  12615500  12623000  12648500
          12653500  12655000  12657000 *12672500* 12757000
B  --  STREAM VARIABLE  --  DECLARED AT 12657000
          *12661000* 12661500 *12663500*
B  --  REAL  --  DECLARED AT 12803500
          12804000  12843000  12880500  12887000
B  --  STREAM VARIABLE  --  DECLARED AT 12880500
          12881500
B  --  STREAM VARIABLE  --  DECLARED AT 12887000
B  --  REAL  --  DECLARED AT 13004000
          13036000  13049000  13057000  13062000  13069000  13072000  13075000  13076000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14342100
B  --  STREAM VARIABLE  --  DECLARED AT 14383100
          14383200
B  --  STREAM VARIABLE  --  DECLARED AT 14414000
          14420000
B  --  STREAM VARIABLE  --  DECLARED AT 14535000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14543000
          14552000  14559300  14562000  14569200  14570000  14585300  14585360  14599910  14600000  14603000
B  --  STREAM VARIABLE  --  DECLARED AT 14570000
          14576000
B  --  REAL  --  DECLARED AT 14624450
          *14636000**14637000**14640000**14642000**14643000* 14645000 *14712550*
B  --  STREAM VARIABLE  --  DECLARED AT 14645000
B  --  REAL ARRAY  --  DECLARED AT 15170000
          *15182000* 15185000 *15186000*
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16044000
          16070000  16088000  16124000  16135000  16139000  16187000
B  --  STREAM VARIABLE  --  DECLARED AT 16088000
B  --  STREAM VARIABLE  --  DECLARED AT 16139000
B  --  STREAM VARIABLE  --  DECLARED AT 16187000
          *16193000*
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16345000
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          16371000  16521000  16529000
B  --  REAL  --  DECLARED AT 16696100
          16696200  16708000 *16713000* 16714000  16828100
B  --  STREAM VARIABLE  --  DECLARED AT 16714000
B  --  STREAM VARIABLE  --  DECLARED AT 16828100
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16904000
          16917500  16918500  16959000  16960500  16962000  16968500  16971000
B  --  STREAM VARIABLE  --  DECLARED AT 16962000
B  --  STREAM VARIABLE  --  DECLARED AT 17003400
          17003900
B  --  REAL  --  DECLARED AT 17902000
          *17909000* 17914000
B  --  STREAM VARIABLE  --  DECLARED AT 17909000
B  --  REAL  --  NAME PARAMETER  --  DECLARED AT 18002000
          18000000  18027000  18031500  18035000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 18156000
          18155000  18156000  18225000  18228000  18254000  18255000  18260000  18265000  18273030  18431050  18438120
          18439125  18443000  18454000  18455000  18460000
B  --  STREAM VARIABLE  --  DECLARED AT 18438120
          18438150
B  --  STREAM VARIABLE  --  DECLARED AT 18455000
          18457000
B  --  STREAM VARIABLE  --  DECLARED AT 18528100
          18528500
B  --  STREAM VARIABLE  --  DECLARED AT 19768768
          19768772
B  --  STREAM VARIABLE  --  DECLARED AT 19768900
          19768950
B  --  STREAM VARIABLE  --  DECLARED AT 20020800
B  --  STREAM VARIABLE  --  DECLARED AT 20031500
          20031800
B  --  STREAM VARIABLE  --  DECLARED AT 20043800
          20044100
B  --  STREAM VARIABLE  --  DECLARED AT 20088700
B  --  STREAM VARIABLE  --  DECLARED AT 20106000
          20106300
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20382015
          20382010  20382064  20382200
B  --  STREAM VARIABLE  --  DECLARED AT 20511370
B  --  STREAM VARIABLE  --  DECLARED AT 20511660
B  --  STREAM VARIABLE  --  DECLARED AT 20571700
          20571820
B  --  STREAM VARIABLE  --  DECLARED AT 20592400
          20592500
B  --  STREAM VARIABLE  --  DECLARED AT 20595950
B  --  STREAM VARIABLE  --  DECLARED AT 22181000
B  --  REAL ARRAY  --  DECLARED AT 22901000
          *22913000* 22914000  22915000  22916000
B  --  REAL  --  DECLARED AT 24004000
          *24006000* 24014000  24017000
B  --  STREAM VARIABLE  --  DECLARED AT 28052400
B  --  STREAM VARIABLE  --  DECLARED AT 28053600
B  --  STREAM VARIABLE  --  DECLARED AT 28071400
B  --  STREAM VARIABLE  --  DECLARED AT 28073200
B  --  STREAM VARIABLE  --  DECLARED AT 28081600
B  --  STREAM VARIABLE  --  DECLARED AT 28248800
B  --  STREAM VARIABLE  --  DECLARED AT 28249600
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B  --  STREAM VARIABLE  --  DECLARED AT 28255200
B  --  STREAM VARIABLE  --  DECLARED AT 28263400
B  --  STREAM VARIABLE  --  DECLARED AT 28272400
         28272600
B  --  STREAM VARIABLE  --  DECLARED AT 28451600
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
         32000000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 36001000
         36006000
B  --  STREAM VARIABLE  --  DECLARED AT 37046192
B  --  STREAM VARIABLE  --  DECLARED AT 38014200
B  --  STREAM LABEL  --  DECLARED AT 38134000  --  OCCURS AT 38135000
B  --  STREAM VARIABLE  --  DECLARED AT 38159500
B  --  STREAM VARIABLE  --  DECLARED AT 38219000
B  --  STREAM VARIABLE  --  DECLARED AT 38290000
B  --  STREAM VARIABLE  --  DECLARED AT 38593000
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 39900000
         39905000 *39933000**39938000* 39943000  39946000  39947000  39950000
B  --  REAL  --  DECLARED AT 40004000
         40255000 *40285005* 40286000  40292212 *40293010* 40293030  40293060  40309200 *40317300* 40317400  40317600
         40317700 *40323600* 40323700
B  --  STREAM VARIABLE  --  DECLARED AT 40255000
B  --  STREAM VARIABLE  --  DECLARED AT 40292212
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41316000
         41317200  41317700  41318630  41320240  41320360  41322500  41323110  41323150
B  --  STREAM VARIABLE  --  DECLARED AT 41320360
         41320380
B  --  STREAM VARIABLE  --  DECLARED AT 41322500
B  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41327000
         41333010
B  --  STREAM VARIABLE  --  DECLARED AT 41333010
         41333033  41333037
B  --  STREAM VARIABLE  --  DECLARED AT 41500800
         41501300
B  --  REAL  --  DECLARED AT 44011000
B  --  REAL  --  DECLARED AT 44206700
         44240500 *44240820* 44240920 *44260000* 44260500  44261500 *44269500* 44271500
B  --  STREAM VARIABLE  --  DECLARED AT 44240500
         44240520
B  --  REAL  --  DECLARED AT 45002000
         45092140  45116000  45135110  45135170
B  --  STREAM VARIABLE  --  DECLARED AT 45092140
         45092160
B  --  STREAM VARIABLE  --  DECLARED AT 45116000
B  --  STREAM VARIABLE  --  DECLARED AT 45135110
B  --  STREAM VARIABLE  --  DECLARED AT 45135170
B  --  STREAM VARIABLE  --  DECLARED AT 48076000
BAC  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28026000
         28043800
BAC  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28220600
         28231200
BACC  --  STREAM VARIABLE  --  DECLARED AT 37394200
         37394260  37394300  37394350  37394400
BACK  --  LABEL  --  DECLARED AT 14628000
BACK  --  DEFINE  --  DECLARED AT 20246000
         20461100  20461320  20468000  20470110  38647000
BACK  --  REAL  --  DECLARED AT 22230000
```

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        22268000  22284300  22286070 *22296000* 22307000  22309000  22315000  22354000  22356300  22363000  22365300
        22390000  22410000
BACK  --  REAL  --  DECLARED AT 24004000
       *24006000* 24017000  24018000  24019000
BACK  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28042600
        28025800  28043600
BACK  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28230000
        28220400  28231000
BACK  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28459600
        28461200  28464600
BACK  --  LABEL  --  DECLARED AT 40008050  --  OCCURS AT 40027230
        40027245  40065050  40065110  40078078  40078091
BACKAGAIN  --  LABEL  --  DECLARED AT 22236000  --  OCCURS AT 22371200
        22379000
BACKCLOSE  --  PROCEDURE  --  DECLARED AT 38540000
        41144000
BACKSPACER  --  DEFINE  --  DECLARED AT 28006400
        28046000  28089200
BACKSPACIT  --  SUBROUTINE  --  DECLARED AT 28045600
        28087800  28091600  28093000
BAD  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01261450
        01261170  01261200
BAD  --  STREAM LABEL  --  DECLARED AT 04326600  --  OCCURS AT 04332000
        04326800  04328200  04328400  04330800  04331200  04331400
BAD  --  LABEL  --  DECLARED AT 08284000  --  OCCURS AT 08298800
        08295600  08296800  08297400
BADEXIT  --  LABEL  --  DECLARED AT 24112500  --  OCCURS AT 24155500
        24152000
BADFM  --  SUBROUTINE  --  DECLARED AT 12832000
        12836500  12865000
BADFM  --  SUBROUTINE  --  DECLARED AT 37036100
        37037300  37047615
BADHDR  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28257800
        28280800
BADNM  --  LABEL  --  DECLARED AT 28403000  --  OCCURS AT 28479200
        28476600
BASE  --  DEFINE  --  DECLARED AT 00338000
BASE  --  REAL  --  DECLARED AT 09679300
       *09680400* 09680500  09680600  09681600  09681650  09681700  09681800  09681900
BASIC  --  DEFINE  --  DECLARED AT 20235075
BB  --  REAL  --  DECLARED AT 02133150
        02148000 *02173230* 02173275  02173294  02173300  02149000
BB  --  STREAM VARIABLE  --  DECLARED AT 02173300  --  OCCURS AT 02148000
        02173305
BC  --  STREAM VARIABLE  --  DECLARED AT 04679050
        04679300
BC  --  STREAM VARIABLE  --  DECLARED AT 38762000
        38763000
BCL  --  STREAM VARIABLE  --  DECLARED AT 07066100
        07066350
BCL  --  DEFINE  --  DECLARED AT 37502000
        37512000  37521200
BCNTR  --  INTEGER  --  DECLARED AT 42482000
       *42488100* 42489000  42506000  42506300
BD  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06380350
        06380650
BED  --  REAL ARRAY  --  DECLARED AT 00094000
```

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       *02007300**02007500**02008100**02008200* 22042000 *22043000**22044000* 22399000  44163000  48015400  48062000
        48063000  48075000  48076000
BEDENTER  --  LABEL  --  DECLARED AT 02004900  --  OCCURS AT 02008000
        02007400
BEFORETRYNEXT  --  LABEL  --  DECLARED AT 20597650  --  OCCURS AT 20604050
        20599000
BF  --  INTEGER  --  DECLARED AT 30904000
       *30907000* 30920000  30930000
BF  --  STREAM VARIABLE  --  DECLARED AT 30920000
       *30921000* 30922000 *30924500**30926000* 30927000  30928000
BH  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28280400
        28273200
BHS  --  DEFINE  --  DECLARED AT 28208400
        28257400  28280400  28280600
BIGGERQ  --  NAME  --  DECLARED AT 19901840
       *19904400* 19904650  19904700  19904860
BITLOCN  --  STREAM VARIABLE  --  DECLARED AT 04659400
        04660100  04662300
BITS  --  DEFINE  --  DECLARED AT 19523000
BK  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16219000
        16064000
BKUP  --  STREAM VARIABLE  --  DECLARED AT 04679050
        04679250
BKUP  --  STREAM VARIABLE  --  DECLARED AT 04680350
        04680600
BKUP  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38818000
        38662000
BKUP  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41144000
        41006000
BKUPTAPE  --  REAL SUBROUTINE  --  DECLARED AT 37038000
        37045000  37046000  37046120  37046800
BL  --  STREAM VARIABLE  --  DECLARED AT 16506000  --  OCCURS AT 07361500
        16508100
BLASTQ  --  PROCEDURE  --  DECLARED AT 37320000  --  FORWARD AT 00392000
        04252800  14254000  14676000  14700000  28012030  28012110  28033200  28086600  28222400  37214000  37336000
        38105600  38203600  38699000  38719000  38724000  38751000  38798000
BLEN  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00396000
        00393000  00394000
BLEN  --  REAL  --  DECLARED AT 02191600
        02276270 *02276300*
BLEN  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37421000
        37418000  37419000  37424000  37424200  37425000  37426000  37446000
BLEN  --  INTEGER  --  DECLARED AT 38003000
        38013400  38024000 *38024300* 38025000  38026000 *38027300* 38029000  38030000  38036000  38056000  38098000
BLEN  --  INTEGER  --  DECLARED AT 38102300
        38122000 *38123000* 38143000 *38150000* 38151800  38152000 *38158000*
BLEN  --  INTEGER  --  DECLARED AT 38200300
       *38240000* 38240500 *38246000* 38249000  38277000  38296500  38297500
BLEN  --  INTEGER  --  DECLARED AT 38359000
        38391060  38398000  38399000  38404000  38405000  38411100
BLEN  --  INTEGER  --  DECLARED AT 38544000
        38585000
BLEN  --  INTEGER  --  DECLARED AT 38652000
        38681000  38688000  38704000
BLEN  --  INTEGER  --  DECLARED AT 39002000
        39032000  39033000  39036000 *39084000* 39144000  39230000 *39243000* 39244000  39293400
BLEN  --  INTEGER  --  DECLARED AT 41002000
```

```
      *41045000*
BLKCNTR  --  FIELD  --  DECLARED AT 00061060
        31013100  31014000  31015000  42489000  42506300
BLKODE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000
BMSG  --  LABEL  --  DECLARED AT 20085800
B0  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16379000
        16363000
BOJBIT  --  DEFINE  --  DECLARED AT 00417010
BOJMESS  --  DEFINE  --  DECLARED AT 00405000
        20043000  20100700  20105000  20118370
BOMB  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07231000
        07028100
BOMB  --  LABEL  --  DECLARED AT 18205000
BOMBER  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12635000
        12629500  12632002  12642500  12650000  12652000
BOMBOUT  --  LABEL  --  DECLARED AT 14548000  --  OCCURS AT 14620000
        14583300
BOMBOUT  --  LABEL  --  DECLARED AT 44207250  --  OCCURS AT 44274000
        44262000  44266000  44267500
BOMBTIME  --  SUBROUTINE  --  DECLARED AT 07027000
        07121000  07221000  07225000
BOTH  --  SUBROUTINE  --  DECLARED AT 20566752
        20566855  20571600  20576720
BOUNDARYCK  --  SUBROUTINE  --  DECLARED AT 06086600
        06094400
BREAKMASK  --  DEFINE  --  DECLARED AT 00081970
BREAKSET  --  DEFINE  --  DECLARED AT 02110260
BREAKTOG  --  DEFINE  --  DECLARED AT 00081960
BRL  --  DEFINE  --  DECLARED AT 37502000
        37513000  37516000  37517000  37542000  37544000
BS  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16395000
        16363000
BS  --  REAL  --  DECLARED AT 22230000
        22266000 *22281000**22284000**22286030* 22286050 *22286150**22286180**22301000**22326400* 22326800 *22329200*
       *22377000**22387000* 22390000 *22393000**22395000**22397000**22399000**22421000*
BSIZE  --  REAL  --  DECLARED AT 04554100
       *04568520* 04568530
BSIZE  --  REAL  --  DECLARED AT 04668500
       *04674200* 04674225  04675650  04675700  04676500  04676700  04676850  04677050
BSIZE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37343000
        37338000  37340000 *37352000*
BSIZE  --  REAL  --  DECLARED AT 37388400
        37406000  37408000  37413000
BU  --  REAL  --  DECLARED AT 07269000
        07284000
BU  --  STREAM VARIABLE  --  DECLARED AT 07284000
BU  --  REAL  --  DECLARED AT 08440000
BUF  --  REAL ARRAY  --  DECLARED AT 02133200
      *02173110* 02173120  02173150  02173230  02173240  02173282  02173284  02173288  02173292 *02173294* 02173296
        02173300  02173301  02173380
BUF  --  STREAM VARIABLE  --  DECLARED AT 02173150
BUF  --  STREAM VARIABLE  --  DECLARED AT 02173240
BUF  --  STREAM VARIABLE  --  DECLARED AT 02173301
BUF  --  STREAM VARIABLE  --  DECLARED AT 08112175
BUF  --  STREAM VARIABLE  --  DECLARED AT 08887000
        08890200
```

```
BUF  --  REAL  --  DECLARED AT 20289035
        20289055  20289060  20289065 *20289148* 20289163  20289252  20289255  20289265  20289325  20289335  20289350
        20289360  20289365  20289395  20289510  20289530  20289590
BUF  --  STREAM VARIABLE  --  DECLARED AT 20289163
        20289165  20289175 *20289190**20289205**20289215**20289225*
BUF  --  STREAM VARIABLE  --  DECLARED AT 20289265
       *20289275* 20289280 *20289305* 20289315
BUF  --  STREAM VARIABLE  --  DECLARED AT 20289395
        20289400 *20289415* 20289495
BUF  --  REAL  --  DECLARED AT 32000200
       *32000300* 32000510  32000650  32000812  32001575  32002300
BUF  --  STREAM VARIABLE  --  DECLARED AT 32000510
BUF  --  STREAM VARIABLE  --  DECLARED AT 32000812
        32001000
BUF  --  STREAM VARIABLE  --  DECLARED AT 37394250
        37394260  37394300  37394360
BUFA  --  REAL ARRAY  --  DECLARED AT 16049000
BUFA  --  REAL ARRAY  --  DECLARED AT 16350000
BUFA  --  REAL ARRAY  --  DECLARED AT 16697100
BUFA  --  REAL ARRAY  --  DECLARED AT 16912000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02393100
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02434110
        02434100  02434110 *02434170**02434215* 02434220  02434330 *02434695* 02434700  02434870
BUFF  --  STREAM VARIABLE  --  DECLARED AT 02434220
BUFF  --  STREAM VARIABLE  --  DECLARED AT 02434330
        02434365  02434367
BUFF  --  STREAM VARIABLE  --  DECLARED AT 02434700
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05950000
        05953140 *05953350* 05954000  05955000  05956300  05959200  05964000  05978050  05979340  05979400 *05979500*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 05954000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 05955000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 05959200
BUFF  --  STREAM VARIABLE  --  DECLARED AT 05964000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 05978050
        05978200  05978900
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06068100
        06068000  06068100  06077400  06084500  06115800  06115900
BUFF  --  REAL  --  DECLARED AT 06351000
       *06353500* 06353555  06355000  06360510 *06360600* 06361100  06361610  06365110
BUFF  --  STREAM VARIABLE  --  DECLARED AT 06355000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 06361100
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07485000
       *07487000* 07504000  07511000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 07504000
       *07506000* 07507000
BUFF  --  REAL  --  NAME PARAMETER  --  DECLARED AT 08001000
        08000000  08003000 *08004000* 08006000  08009000  08013000  08015100  08019000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08006000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08009000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08015100
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08019000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08024000
        08028000  08029015  08030200  08031000  08033993  08034000  08043000  08044000  08044600  08051000  08051010
        08052000  08055000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08030200
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08031000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08033993
```

```
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08034000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08051000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08051010
BUFF  --  REAL  --  DECLARED AT 08080000
        08083000  08092000  08093000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08092000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08098700
        08098600  08098650 *08101520* 08106350 *08115300* 08115950  08116050  08116950
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08106350
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08115950
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08282000
        08283000  08285000  08293500 *08296400* 08298200  08299000  08301800
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08293500
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08299000
       *08300000*
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08343000
        08359000 *08361000* 08373000  08374000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08376000
        08384100  08385000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08390000
        08391000 *08408000* 08412000  08415000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08418000
        08419100  08419200 *08419700* 08420000  08437200  08437550 *08438200*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08419200
        08419300 *08419500*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08437200
        08437300
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08437550
        08437600 *08438000*
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08625000
        08624000  08625000  08629000  08632000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08632000
        08634000 *08642000*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08690100
        08690110 *08690180* 08690240
BUFF  --  INTEGER  --  DECLARED AT 08733000
       *08735000* 08784000  08791000  08798500
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08791000
       *08795500* 08796000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08800000
       *08802500* 08839600  08848000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08839600
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08850100
        08850000  08882050 *08882500**08886000* 08887100  08901000  08905000  08906000  08911000  08926000  08927000
        08947100  08947400  08947600
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08887100
        08888000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 08905000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09400000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09600000
        09631000  09633400  09659000  09670000  09676000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09679100
        09679800  09681000  09681515  09682200  09682800
BUFF  --  REAL  --  DECLARED AT 12204000
       *12222000* 12223000  12298000  12310000  12321000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 12310000
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15400000
```

```
        15404000  15423000  15427000  15437100  15438060  15438150
BUFF  --  STREAM VARIABLE  --  DECLARED AT 15404000
        15405000
BUFF  --  REAL  --  NAME PARAMETER  --  DECLARED AT 15500000
       *15501200* 15501600  15531200
BUFF  --  STREAM VARIABLE  --  DECLARED AT 15531200
        15531300 *15531500*
BUFF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15534000
        15541000  15550000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 15541000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 15550000
BUFF  --  STREAM VARIABLE  --  DECLARED AT 16036200
        16036400  16036500  16037500  16040600 *16040700*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 16041200
        16041400 *16043300*
BUFF  --  REAL  --  DECLARED AT 16048000
        16049000  16070000 *16072000* 16076000  16079000 *16085000* 16109500  16154000  16247000  16261000  16343200
        16343500  16343700
BUFF  --  REAL  --  DECLARED AT 16349000
        16350000  16371000 *16373000* 16377000  16494000  16500000  16503000  16503100 *16503200* 16505100  16506000
        16689100  16689300
BUFF  --  STREAM VARIABLE  --  DECLARED AT 16506000
        16508000
BUFF  --  REAL  --  DECLARED AT 16692500
        16693000  16697100  16708000 *16710500* 16712500  16713000  16714000  16819400  16854800  16902600  16902800
BUFF  --  REAL  --  DECLARED AT 16908000
        16908500  16912000 *16918500**16919500* 16921000  16921500  16925500  16926000  16927000  16954000  16954500
        16956040  16958620  16959000  16962000  16965000 *16967000* 16967500 *16968120*
BUFF  --  STREAM VARIABLE  --  DECLARED AT 16956040
        16956050
BUFFADR  --  REAL ARRAY  --  DECLARED AT 28804000
        28831000 *28871000* 28872000  28873000
BUFFEND  --  STREAM VARIABLE  --  DECLARED AT 04652200
        04652400  04652500  04653400  04653600
BUFFER  --  REAL  --  DECLARED AT 04554600
       *04651500* 04652100  04652200  04656400  04657700  04658800  04659500
BUFFER  --  STREAM VARIABLE  --  DECLARED AT 04656400
        04656800
BUFFER  --  STREAM VARIABLE  --  DECLARED AT 04657700
        04657900
BUFFER  --  STREAM VARIABLE  --  DECLARED AT 04659500
BUFFERSIZE  --  REAL  --  DECLARED AT 04554600
       *04651600* 04652200 *04654700* 04656300  04657600  04658900
BUFFERSIZE  --  STREAM VARIABLE  --  DECLARED AT 04656300
        04656900
BUFFERSIZE  --  STREAM VARIABLE  --  DECLARED AT 04657600
        04658000
BUFFSIZE  --  DEFINE  --  DECLARED AT 15501100
        15501200
BUFFSTART  --  STREAM VARIABLE  --  DECLARED AT 04652100
        04652600
BUILDAVAIL  --  SUBROUTINE  --  DECLARED AT 40027100
        40100300  40100700  40100900  40101300  40261046  40292050
BUILDHEADER  --  SUBROUTINE  --  DECLARED AT 20289045
        20289140  20289520
BUILDLABEL  --  PROCEDURE  --  DECLARED AT 37337000
        37455000  38275500
```

```
BUILDMESS -- LABEL -- DECLARED AT 41316500 -- OCCURS AT 41321700
      41318500
BUMP -- REAL -- VALUE PARAMETER -- DECLARED AT 02347210
      02347200  02347210  02347240
BUMPFA -- REAL -- DECLARED AT 28003000
      28003200
BUMPFA -- REAL -- DECLARED AT 28401400
      28429000  28429400  28443200 *28457000*
BUMPTUMASK -- DEFINE -- DECLARED AT 00080950
BUMPTUTIME -- DEFINE -- DECLARED AT 00080950
BUS -- REAL -- DECLARED AT 08626000
     *08629000* 08660000  08667100  08669000
BUS -- STREAM VARIABLE -- DECLARED AT 08660000
BYBY -- DEFINE -- DECLARED AT 00005220
      02181000  04004170  06037300  06380350  14603750  18013000  40278150
BYE -- LABEL -- DECLARED AT 14547000 -- OCCURS AT 14603750
      14598000
BYE -- LABEL -- DECLARED AT 40008050 -- OCCURS AT 40278150
      40293102
BYPASS -- REAL -- DECLARED AT 00418850
     *14596000* 14598000  14598200 *14603330* 14603700  40011000 *40266000* 40278100 *40278200**40293090* 40293100
      40293101 *44240500* 44240580
BZ -- LABEL -- DECLARED AT 05847800 -- OCCURS AT 05853700
      05849000
BZ -- LABEL -- DECLARED AT 05952600 -- OCCURS AT 05961000
      05971400
B6500 -- DEFINE -- DECLARED AT 20247800 -- OCCURS AT 16192000
B6500 -- DEFINE -- DECLARED AT 28007800
      28022400  28025000  28028600  28036400  28063200  28063800
B6500 -- DEFINE -- DECLARED AT 28208800
      28213200  28217000  28219600  28225000  28225400  28235000  28235200  28237200  28273400  28276000
B6500 -- DEFINE -- DECLARED AT 28405400
C -- REAL -- VALUE PARAMETER -- DECLARED AT 00379700
      00379600
C -- REAL -- VALUE PARAMETER -- DECLARED AT 00429000
      00428000
C -- INTEGER -- VALUE PARAMETER -- DECLARED AT 00432000
C -- REAL -- VALUE PARAMETER -- DECLARED AT 00452800
      00452600  00452700
C -- REAL -- NAME PARAMETER -- DECLARED AT 02052800
      02052700
C -- STREAM VARIABLE -- DECLARED AT 02275800
      02275900
C -- REAL -- DECLARED AT 02361000
     *02364000**02368000* 02371000  02372000
C -- REAL -- DECLARED AT 02384000
      02392000
C -- STREAM VARIABLE -- DECLARED AT 02392000
C -- REAL -- VALUE PARAMETER -- DECLARED AT 02393500
      02393400
C -- REAL -- VALUE PARAMETER -- DECLARED AT 02696200
C -- REAL -- DECLARED AT 04004000
      04007000  04014002
C -- STREAM VARIABLE -- DECLARED AT 04109000
      04111000
C -- REAL -- VALUE PARAMETER -- DECLARED AT 04122000
      04128900  04129000  04134060  04146100  04146200  04150200  04194600
```

```
C  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05843600
       05842500  05843950
C  --  INTEGER  --  DECLARED AT 05847700
       05848300 *05850110* 05850130  05851300 *05852000* 05852100  05852700
C  --  INTEGER  --  DECLARED AT 05951800
       05952220 *05961200* 05961600 *05968600* 05968800  05968900  05971800  05972000 *05973000**05973600* 05974000
       05974400
C  --  INTEGER  --  DECLARED AT 06069100
       06074100  06086300 *06092700* 06092800  06093700 *06097200**06097300**06098700**06101000*
C  --  STREAM VARIABLE  --  DECLARED AT 06074100
       06076200 *06076300*
C  --  REAL  --  DECLARED AT 06462100
       06463600  06463620  06463680  06464800  06464900 *06465000* 06465100  06465850 *06465910*
C  --  REAL  --  DECLARED AT 07244000
       *07251000* 07253000  07253100 *07255000* 07259200  07262400
C  --  STREAM VARIABLE  --  DECLARED AT 07262400
       07263200
C  --  STREAM VARIABLE  --  DECLARED AT 07295020
       07295050
C  --  REAL  --  DECLARED AT 08099450
       08104900  08104950  08105400  08112150
C  --  STREAM VARIABLE  --  DECLARED AT 08112150
       08112400
C  --  INTEGER  --  DECLARED AT 08306000
       *08307000* 08308000  08309000
C  --  REAL SUBROUTINE  --  DECLARED AT 08344100
       08344200  08358000  08358100  08360000
C  --  STREAM VARIABLE  --  DECLARED AT 08344200
       08355000
C  --  REAL  --  DECLARED AT 08377000
       *08385100* 08385200  08385300  08385400  08385500
C  --  STREAM VARIABLE  --  DECLARED AT 08473000
C  --  STREAM VARIABLE  --  DECLARED AT 08887001
       08888000
C  --  STREAM VARIABLE  --  DECLARED AT 12657000
       12659500
C  --  REAL  --  DECLARED AT 14002000
       *14038000**14040000**14058000**14064000**14066000* 14067000  14078000
C  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14155000
       14186000  14186160  14186170  14206320  14206330  14208000  14216000  14218030  14218088  14225000  14239000
       14299000
C  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14342100
C  --  STREAM VARIABLE  --  DECLARED AT 14535000
       14537100
C  --  STREAM VARIABLE  --  DECLARED AT 14570000
       14578000
C  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15169000
       15168000  15168100  15170000  15176000  15182000
C  --  REAL ARRAY  --  DECLARED AT 15600400
       *15600800**15600950**15601000**15601600* 15602500  15602600  15602640  15604000  15604100  15604800
C  --  STREAM VARIABLE  --  DECLARED AT 16088000
C  --  STREAM VARIABLE  --  DECLARED AT 16828200
C  --  STREAM VARIABLE  --  DECLARED AT 18455000
       18456000
C  --  SWITCH LABEL  --  DECLARED AT 18501800
       18504000  18521000
C  --  STREAM VARIABLE  --  DECLARED AT 18521000
```

```
          18521400
C   --    SWITCH LABEL  --  DECLARED AT 18701300
          18702200
C   --    SWITCH LABEL  --  DECLARED AT 19511000
          19526000
C   --    STREAM VARIABLE  --  DECLARED AT 20030800
          20031700
C   --    STREAM VARIABLE  --  DECLARED AT 20043700
          20044000
C   --    STREAM VARIABLE  --  DECLARED AT 20053200
          20054100  20054500
C   --    STREAM VARIABLE  --  DECLARED AT 20061100
          20061300  20062200
C   --    STREAM VARIABLE  --  DECLARED AT 20105900
          20106200
C   --    REAL  --  NAME PARAMETER  --  DECLARED AT 20382015
          20382010  20382056  20382095 *20382600**20382680*
C   --    STREAM VARIABLE  --  DECLARED AT 20511660
          20511670  20511702
C   --    STREAM VARIABLE  --  DECLARED AT 20571700
          20571820
C   --    STREAM VARIABLE  --  DECLARED AT 20595950
C   --    REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
          32000000  32000800
C   --    STREAM VARIABLE  --  DECLARED AT 32000800
          *32001400*
C   --    STREAM VARIABLE  --  DECLARED AT 37046192
C   --    STREAM VARIABLE  --  DECLARED AT 37256000
C   --    STREAM VARIABLE  --  DECLARED AT 37284130
C   --    REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
          37357300  37357400
C   --    STREAM VARIABLE  --  DECLARED AT 38159500
          *38161000**38162000*
C   --    REAL  --  DECLARED AT 38362000
          38456000  38464000
C   --    REAL  --  DECLARED AT 38547000
C   --    REAL  --  DECLARED AT 38655000
C   --    REAL  --  DECLARED AT 40004000
          40257030  40257060  40258000  40261010  40261044  40261048  40261200  40261300 *40285010* 40285030  40285500
          *40286000* 40287000 *40293050* 40293060  40293070  40293080 *40321400* 40321500  40321700 *40321910* 40322400
          40323100 *40323710* 40323900
C   --    REAL  --  DECLARED AT 41003000
          41191100
C   --    STREAM VARIABLE  --  DECLARED AT 41317780
C   --    STREAM VARIABLE  --  DECLARED AT 41320360
C   --    STREAM VARIABLE  --  DECLARED AT 41320600
C   --    STREAM VARIABLE  --  DECLARED AT 41500800
          41501400
C   --    STREAM VARIABLE  --  DECLARED AT 41606200
          41606400
C   --    REAL  --  DECLARED AT 44011000
          44037300 *44037400**44154010*
C   --    REAL  --  DECLARED AT 44206700
          *44264000**44265000* 44265500  44266500 *44268500* 44270000  44271000  44271500  44272000
C   --    REAL  --  DECLARED AT 45002000
CA  --    LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16486000
          16364000
```

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CADDR  --  REAL  --  DECLARED AT 20566100
       *20580300*
CADDR  --  REAL  --  DECLARED AT 20581000
        20582100  20582350
CADDR  --  REAL  --  DECLARED AT 20584000
       *20585550*
CADDR  --  REAL  --  DECLARED AT 20586800
CADDR  --  REAL  --  DECLARED AT 20589800
CADDR  --  REAL  --  DECLARED AT 20591000
CADDR  --  REAL  --  DECLARED AT 20595000
CADDR  --  REAL  --  DECLARED AT 20596800
CADDR  --  REAL  --  DECLARED AT 20600010
        20605050 *20605340*
CADDR  --  REAL  --  DECLARED AT 20701500
CALCULATEPURGE  --  INTEGER PROCEDURE  --  DECLARED AT 02380000
       *02391000* 02641000  06188100  08105700  15622000  20157700  22012000  22909000  28418400  37345000
CALLENORCONT  --  REAL  --  DECLARED AT 19693000
       *19696700* 19697200  19799060
CANDEINPUTAREAV  --  DEFINE  --  DECLARED AT 00017572
CARD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20289020
        20289010  20289020  20289152  20289160
CARD  --  STREAM VARIABLE  --  DECLARED AT 20289160
        20289210  20289240
CARD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20511120
        20511100  20511110  20511420  20511720
CARD  --  REAL  --  DECLARED AT 20566100
        20566785  20574925
CARD  --  REAL  --  DECLARED AT 20581000
CARD  --  REAL  --  DECLARED AT 20584000
        20585610
CARD  --  REAL  --  DECLARED AT 20586800
        20587370
CARD  --  REAL  --  DECLARED AT 20589800
CARD  --  REAL  --  DECLARED AT 20591000
        20592700
CARD  --  REAL  --  DECLARED AT 20595000
CARD  --  REAL  --  DECLARED AT 20596800
CARD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20597550
CARD  --  REAL  --  DECLARED AT 20600010
        20600850  20600900 *20600950* 20601000  20601200  20602000  20602470  20602480  20602500  20602530  20602900
        20604400  20605500  20605510  20607020  20607600  20608112  20608114  20608870  20609435  20609436  20609660
        20610260
CARD  --  REAL  --  DECLARED AT 20701500
CARD  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22209000
        22065000
CARDLOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20292200
        20292000  20292100  20295100  20298000  20299000  20299030  20300000  20303000
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20299030
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20300000
        20301000  20301100  20301500
CARDLOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20314200
        20314000  20314100  20325000  20374400  20374401  20374415
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20374401
        20374402 *20374404**20374406*
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20374415
        20374425
CARDLOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20386000
```

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        20384000  20385000  20397200
CARDLOC  --  REAL  --  DECLARED AT 20566100
        20566900  20576754  20576756  20576768
CARDLOC  --  REAL  --  DECLARED AT 20581000
CARDLOC  --  REAL  --  DECLARED AT 20584000
        20584200  20585715  20585725
CARDLOC  --  REAL  --  DECLARED AT 20586800
        20587100
CARDLOC  --  REAL  --  DECLARED AT 20589800
        20590000
CARDLOC  --  REAL  --  DECLARED AT 20591000
        20591400
CARDLOC  --  REAL  --  DECLARED AT 20595000
        20595350  20595400  20595550  20595560  20595900  20595950  20596200  20596300
CARDLOC  --  REAL  --  DECLARED AT 20596800
CARDLOC  --  REAL  --  DECLARED AT 20600010
        20600040  20600150  20600170  20600390 *20602000* 20602100  20602150  20602250  20602530  20603100  20603150
        20603250  20604105  20604850  20605050  20607020  20608070  20608200  20608700  20609000  20609350  20609435
        20610200
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20600170
        20600180 *20600260*
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20600390
        20600410  20600460
CARDLOC  --  STREAM VARIABLE  --  DECLARED AT 20607020
        20607260
CARDLOC  --  REAL  --  DECLARED AT 20701500
        20706000
CASE0  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28050000
        28010000
CASE1  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28067200
        28010000
CASE2  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28067600
        28010000
CASE3  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28050100
        28010000
CASE4  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28067800
        28010000
CASE5  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28068200
        28010000
CASE6  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28075600
        28010000
CASE7  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28094400
        28010000
CASE9  --  LABEL  --  DECLARED AT 28006000  --  OCCURS AT 28097600
        28010200
CATCH  --  INTEGER  --  DECLARED AT 14351200
        *14358150* 14383740
CAUSEL  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19903500
        19901700
CC  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16505000
        16365000
CC  --  LABEL  --  DECLARED AT 20597650  --  OCCURS AT 20602650
        20599000  20606700  20608810  20609410
CC  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38725000
        38815000
CC  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
CCA  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20580300
```

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        20576790  20580000  20580100
CCA  --  REAL ARRAY  --  DECLARED AT 28004400
        28012130  28012140  28053600  28054600
CCA  --  REAL ARRAY  --  DECLARED AT 28401800
        28409600  28409800 *28455400**28455600* 28456000  28458400  28459000  28460000  28461000  28462200  28462800
        28464400  28465400  28482400  28482600
CCAIN  --  REAL  --  DECLARED AT 28002400
        28002600  28053600  28054600
CCAIN  --  REAL  --  DECLARED AT 28401200
       *28410200**28456200* 28458400  28459000 *28459800* 28460000  28461000  28462200 *28462600* 28462800  28464400
        28465400 *28481000* 28482400
CCC  --  LABEL  --  DECLARED AT 20590910  --  OCCURS AT 20594450
        20592850  20594000
CCC  --  LABEL  --  DECLARED AT 20597880  --  OCCURS AT 20605870
        20609560  20609570
CCCOMPILE  --  REAL PROCEDURE  --  DECLARED AT 20583800
       *20584340**20585250**20585350**20585380* 20586650  20603750
CCCOUNT  --  DEFINE  --  DECLARED AT 02112100
CCERR  --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20782000
        20714500  20717000  20718000  20721000
CCFIND  --  REAL PROCEDURE  --  DECLARED AT 20596750
       *20597450* 20597500  20602950  20604450
CCFINISH  --  PROCEDURE  --  DECLARED AT 20580800
        20583750  20609600
CCLABEL  --  REAL PROCEDURE  --  DECLARED AT 20594850
       *20595750**20596500**20596600* 20596700  20609500
CCLIB  --  REAL PROCEDURE  --  DECLARED AT 20566000
       *20580100**20580200* 20606600
CCSECMAINT  --  REAL PROCEDURE  --  DECLARED AT 20590850
       *20591750**20591850**20592800**20594400**20594500**20594550**20594700* 20594800  20606050  20606100  20606350
CCSET  --  REAL PROCEDURE  --  DECLARED AT 20700000  --  FORWARD AT 20580400
        20606700 *20711100**20781000* 20784000
CCTABLSZ  --  DEFINE  --  DECLARED AT 00441000
        20601660  20601720  20601740
CCTBLADDR  --  DEFINE  --  DECLARED AT 02112200
        20601640  20601760  20610420  20610430
CCTBLWORD  --  REAL  --  DECLARED AT 02112000
       *20601600* 20601640  20601660 *20601760**20610400* 20610420 *20610430*
CCTYPE  --  LABEL  --  DECLARED AT 20597650  --  OCCURS AT 20602800
        20599000  20606000  20606080  20610100
CCUNIT  --  REAL PROCEDURE  --  DECLARED AT 20589700
       *20590300**20590730**20590740* 20590800  20606800
CD  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16786000
        16704500
CD  --  STREAM VARIABLE  --  DECLARED AT 38274000
CD  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38802000
        38662000
CD  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
CDATE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
        00371000  00372000
CDATE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
        00374000  00375000
CDATE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
        37000000  37001000  37046178  37046730  37174100
CDATE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37193000  37197500  37199100  37216000  37224200  37240200  37260000
```

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CDATE  -- REAL  -- VALUE PARAMETER  -- DECLARED AT 37342000
        37337000  37339000
CDATE  -- INTEGER  -- DECLARED AT 38007000
        38014400 *38015400*
CDATE  -- INTEGER  -- DECLARED AT 38102700
        38104900  38105800  38113000  38151000
CDATE  -- INTEGER  -- DECLARED AT 38200700
        38202900  38203800  38213500  38274000  38275500  38296750
CDATE  -- INTEGER  -- DECLARED AT 39004100
        39087100 *39087500* 39143000
CDEX  -- REAL  -- DECLARED AT 20566100
       *20580300*
CDEX  -- REAL  -- DECLARED AT 20581000
        20582250  20582300 *20582500* 20583300  20583450  20583500  20583600
CDEX  -- REAL  -- DECLARED AT 20584000
       *20584750**20585000*
CDEX  -- REAL  -- DECLARED AT 20586800
CDEX  -- REAL  -- DECLARED AT 20589800
CDEX  -- REAL  -- DECLARED AT 20591000
       *20591900* 20592000 *20592950* 20593650
CDEX  -- REAL  -- DECLARED AT 20595000
CDEX  -- REAL  -- DECLARED AT 20596800
CDEX  -- REAL  -- DECLARED AT 20600010
        20605050 *20605340*
CDEX  -- REAL  -- DECLARED AT 20701500
CDFREE  -- DEFINE  -- DECLARED AT 00081710
CDMASK  -- DEFINE  -- DECLARED AT 00081710
        07001640  07001840  07272500  07296000  07301000  07352000  07371300  07371600  07371950  07426000  07427625
        07455000  07572000  45138000
CDNUM  -- STREAM VARIABLE  -- DECLARED AT 07001680
        07001720
CDONLY  -- DEFINE  -- DECLARED AT 00416780
        07253100  20152300  22209400
CDONLY  -- REAL  -- DECLARED AT 07007100
        07059110 *07072000*
CELL  -- REAL  -- DECLARED AT 04257600
CELL  -- DEFINE  -- DECLARED AT 06073200
        06090600  06090800  06101600  06108000  06109000  06115700
CEQN  -- REAL ARRAY  -- DECLARED AT 20566100
CEQN  -- REAL ARRAY  -- DECLARED AT 20581000
       *20582200**20582250**20582300* 20582350
CEQN  -- REAL ARRAY  -- DECLARED AT 20584000
       *20584400**20584550**20584600**20584650**20584700**20584710**20584850**20584900**20585000* 20585450  20585630
        20586000  20586050
CEQN  -- REAL ARRAY  -- DECLARED AT 20586800
CEQN  -- REAL ARRAY  -- DECLARED AT 20589800
CEQN  -- REAL ARRAY  -- DECLARED AT 20591000
CEQN  -- REAL ARRAY  -- DECLARED AT 20595000
CEQN  -- REAL ARRAY  -- DECLARED AT 20596800
CEQN  -- REAL ARRAY  -- DECLARED AT 20600010
       *20601900* 20605050
CEQN  -- REAL ARRAY  -- DECLARED AT 20701500
CF  -- FIELD  -- DECLARED AT 00060100
        00060120  00656200  01250800  01261100  01261300  01261400  02133300  02173230  02208000  02212000  02215000
        02216010  02216200  02262000  02263000  02275600  02276400  02285000  02318000  02319000  02321000  02322000
        02323000  02662000  04004150  04137250  04137270  04194500  04568470  04568520  04568530  04638200  04638900
        04647100  04671750  04686450  04726000  04727000  05953400  06013000  06031000  06086400  06089900  06097000
```

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06380525  06411000  06463880  06463988  07003440  07264000  07278000  07312000  07318000  07321100  07330300
07333000  07417000  07451000  07503000  07559000  07565000  08105350  08105400  08106040  08108200  08116350
08177200  08179600  08259450  08269200  08269300  08270000  08276500  08296350  08299000  08434500  08718000
08839000  08864000  08886000  08932000  08936000  08938000  09618000  09622000  09657000  12271500  12387500
12397000  12422500  12561600  12647500  12653500  12665500  12863000  13036000  13075000  13080100  13081000
13101000  14015200  14186160  14206320  14280000  14283000  14284000  14351350  14358398  14358615  14360370
14360600  14362000  14387000  14403900  14431470  14598000  14598200  14599910  14600000  14603700  14702600
15422000  15601000  15601400  15602200  15602500  15602640  15604200  16224000  16505100  16804500  16851200
16852100  16852800  16853000  16853100  16853500  16926020  16928500  17003000  18015000  18018000  18022000
18047500  18049000  18053000  18063000  18071000  18075500  18232000  18272200  18273030  18273040  18276500
18443000  18559000  18720200  18720400  18740600  18740900  18810300  18844600  18845200  19569000  19575000
19685350  19685360  19707000  19711300  19720000  19724000  19727000  19750000  19751000  19754000  19766300
19768750  19778000  19779000  19781000  19785000  19900760  19900815  20021700  20025000  20034500  20035300
20035500  20035700  20035900  20049800  20050000  20066600  20089600  20105350  20119000  20120100  20121800
20124900  20125000  20125300  20163700  20174300  20187300  20382680  20511420  20511610  20566830  20567325
20567335  20567345  20567350  20569975  20572300  20572500  20572700  20575050  20575100  20575200  20575600
20576210  20577475  20577775  20577925  20578600  20578650  20580305  20581400  20581800  20582000  20582350
20582550  20583150  20583250  20583350  20583600  20585375  20587550  20588900  20594350  20600120  20601640
20601760  20607040  20610420  20610430  20704250  20758000  22069440  22145550  22264000  22266000  22267000
22284000  22284200  22286050  22286060  22286180  22296000  22301000  22307000  22314000  22326800  22328400
22354000  22356300  22363000  22365300  22390000  22410000  22907000  22918000  24006000  24007000  24017000
24024000  24030000  24033200  24034000  24034400  24035800  24037000  24037300  24152000  28012140  28013000
28051200  28246800  28254000  28273400  28299600  28307710  28409800  28425200  28431800  28455600  28459000
28467000  28812000  28823000  28858000  28882400  28887000  30910000  31010000  31017300  31017400  31021000
32001500  37046830  37047600  37233500  37255900  37329000  37509000  38137000  38247500  38284000  38437000
38439000  38443000  38452000  38458000  38466000  38471000  38476000  38496000  38499000  38573100  38587000
38594300  38683000  38732100  39303000  40011000  40016200  40027240  40047100  40048000  40049000  40051000
40060302  40062000  40065020  40070000  40078030  40078032  40078038  40078040  40078042  40078048  40278100
40293101  40293110  40309200  40317210  40317300  40321700  40322220  40323200  40323300  41204000  41310700
41310900  41311000  41319000  41329800  41334700  41334900  41500200  41602600  42525120  42525150  44037400
44101000  44149000  44150000  44189550  44189600  44201300  44240690  44260000  44260500  44265500

CHAIN  -- REAL  -- DECLARED AT 14351210
      *14358800* 14411620  14411660  14411740
CHAN  -- LABEL  -- DECLARED AT 20566600  -- OCCURS AT 20576850
       20566620  20579900
CHANG  -- DEFINE  -- DECLARED AT 20225500
CHANGE  -- LABEL  -- DECLARED AT 20597800  -- OCCURS AT 20606500
       20598000
CHANGEABORT  -- PROCEDURE  -- DECLARED AT 22900000  -- FORWARD AT 06179000
       06187000  20180600
CHANGEDATE  -- PROCEDURE  -- DECLARED AT 08376000  -- FORWARD AT 02393100
       06188100  08373000  15622000  20157700  22012000  22012500  22909000
CHANGEFACTOR  -- PROCEDURE  -- DECLARED AT 08800000
       08849000  16132000
CHANGEINTRINSICFILE  -- PROCEDURE  -- DECLARED AT 09600000  -- FORWARD AT 02111200
       16801500
CHANGEMCP  -- PROCEDURE  -- DECLARED AT 09679100  -- FORWARD AT 02111100
       16168000
CHANGENAME  -- LABEL  -- DECLARED AT 18501100  -- OCCURS AT 18525700
       18524400
CHANGENAME  -- LABEL  -- DECLARED AT 19521000
CHANGEOPTION  -- PROCEDURE  -- DECLARED AT 08624000
       16254000
CHANGEPRIORITY  -- PROCEDURE  -- DECLARED AT 07485000
       07512000  16251000
CHANIO  -- REAL ARRAY  -- DECLARED AT 00169000
      *04007000* 04128900  44164020
```

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CHANNEL  --  REAL ARRAY  --  DECLARED AT 00170000
      *04005000* 04129000 *04156000* 44164010  48117200
CHAR  --  REAL  --  DECLARED AT 22230000
       22259000  22283000 *22286020* 22286040  22286170 *22300000* 22305000 *22307000* 22311000 *22314000* 22315000
       22320000 *22376000**22420000*
CHECK  --  SUBROUTINE  --  DECLARED AT 02434162
       02434600  02434630
CHECK  --  LABEL  --  DECLARED AT 14548000  --  OCCURS AT 14563000
       14589000
CHECK  --  LABEL  --  DECLARED AT 16914000  --  OCCURS AT 16946600
       16926270
CHECK  --  LABEL  --  DECLARED AT 18202000  --  OCCURS AT 18291000
       18302000
CHECK  --  SUBROUTINE  --  DECLARED AT 20566665
       20566805  20566810  20569925  20570030  20570140  20570160  20570560  20570577  20576220
CHECK10  --  REAL SUBROUTINE  --  DECLARED AT 37323100
       37323300  37324000
CHECKIOBORFILEMESS  --  PROCEDURE  --  DECLARED AT 41312000  --  FORWARD AT 04121500
       04283000  04366800  41051620  41314900
CHECKLINK  --  DEFINE  --  DECLARED AT 00416560
CHECKSTACKSPACE  --  DEFINE  --  DECLARED AT 02693000
       04103100  08173200  14014100  19525000  31005010  42517100
CHECKTERMIX  --  SUBROUTINE  --  DECLARED AT 37185310
       37218400  37228000  37241500
CHK  --  STREAM LABEL  --  DECLARED AT 04363200  --  OCCURS AT 04363800
       04363400
CHKLBL  --  DEFINE  --  DECLARED AT 28009200
       28025600  28026200  28029400  28055000  28062600  28066000  28068800
CHKLBL  --  DEFINE  --  DECLARED AT 28209800
       28220200  28220800
CHRERR  --  STREAM VARIABLE  --  DECLARED AT 04658600
      *04661300* 04662400
CHUNKSIZE  --  DEFINE  --  DECLARED AT 00339000
CI  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16798000
       16704500
CIDROW  --  REAL ARRAY  --  DECLARED AT 02187500
       02347330  07372100  07409000  07415100 *07419800* 07429000 *07433000**07437300**07453000* 07462500  07478500
       08175300  08478800  20297000 *20489100**20585050* 20595450 *20595500**20595550**20596450**20606900* 37241020
       38146500 *38147000* 38804000  39145210  44164500
CIDROWAREAV  --  DEFINE  --  DECLARED AT 00017390
CIDTABLE  --  REAL ARRAY  --  DECLARED AT 02187500
       02347300  07372200  07417400  08478900 *20289144* 20289160  20289163  20374100  20374200  20608650  37046410
       37241030  38806300
CK  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06085900
       06085300
CKBKUP  --  SUBROUTINE  --  DECLARED AT 38570000
       38583000  38584000  38588000  38591100  38595000
CKFM  --  LABEL  --  DECLARED AT 37007000  --  OCCURS AT 37046960
       37046060  37046075
CL  --  STREAM VARIABLE  --  DECLARED AT 00032000
       00033000
CL  --  STREAM VARIABLE  --  DECLARED AT 02173300
       02173325  02173340
CL  --  REAL  --  DECLARED AT 14002000
      *14019000* 14020000  14030000 *14072000* 14077000
CL  --  STREAM VARIABLE  --  DECLARED AT 14020000
      *14022000**14027000*
```

```
CL  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16203000
        16063000
CLAIMT  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37046160
        37046940
CLOCK  --  INTEGER  --  DECLARED AT 08395000
       *08410200*
CLEANUP  --  LABEL  --  DECLARED AT 38363000  --  OCCURS AT 38537000
        38529000
CLEANUP  --  LABEL  --  DECLARED AT 38663000  --  OCCURS AT 38818000
        38792000
CLEANUP  --  LABEL  --  DECLARED AT 41007000  --  OCCURS AT 41188000
        41142000  41269000
CLEAR  --  LABEL  --  DECLARED AT 04357600  --  OCCURS AT 04432400
        04378800  04391800  04406000
CLEAR  --  SUBROUTINE  --  DECLARED AT 40009000
        40267000  40293140
CLEARTHEFILE  --  SUBROUTINE  --  DECLARED AT 20704200
        20704280  20769000
CLEARWRS  --  DEFINE  --  DECLARED AT 00413000
CLOCK  --  REAL  --  DECLARED AT 00024005
        00039055  01260455  01261170  02008300  02027000  02034000  02107000  02185900  02364000  04007000  04014002
        04194050  04194600  04377400  04557200  04557300  04568364  04568366  04671400  04671450  06190000  06203650
        06203700  06237000  06361705  06415000  07018000  07262000  08276360  08533700  08536000  08538000  08886300
        12403500  12419000  12420000  12452500  12536500  12540000  12610100  12612000  12696000  12701500  12750250
        12817600  12819500  12853000  12857500  14205000  14383750  14431650  17904600  17926100  18032000  18032010
        18503300  18559400  18710900  18711200  18730100  18730200  18730300  19774650  20178900  20180350  20190620
        20583100  22014100  22020000  22040000  22069330  22242100  22252000  22294120  22429230  24045100  37283000
        37285200  45112000  45128000  45135030  45135230 *48000000*  48000500  48010074  48010080  48080200  48124000
CLOCK  --  REAL  --  DECLARED AT 08394000
        08395000 *08411000*
CLOSE  --  LABEL  --  DECLARED AT 14166000  --  OCCURS AT 14258000
        14268000
CLOSE  --  LABEL  --  DECLARED AT 14627300  --  OCCURS AT 14659000
        14632000
CLOSE  --  LABEL  --  DECLARED AT 18205000  --  OCCURS AT 18431000
        18358000  18366000  18373000
CLOSEBIT  --  DEFINE  --  DECLARED AT 00417050
CLOSED  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38818000
        38662000
CLOSED  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41308000
        41006000  41041000  41213000
CLOSEINPUT  --  LABEL  --  DECLARED AT 18206000  --  OCCURS AT 18359000
        18213000
CLOSEMESS  --  DEFINE  --  DECLARED AT 00416000
        38610250  41191200
CLOSEOUT  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38645000
        38643000
CLOSEOUT  --  LABEL  --  DECLARED AT 38692000  --  OCCURS AT 38817000
        38733000  38738000  38744000  38747000
CLOSEOUT  --  LABEL  --  DECLARED AT 41035000  --  OCCURS AT 41187000
        41307290
CLOSEOUTPUT  --  LABEL  --  DECLARED AT 18206000  --  OCCURS AT 18363000
        18214000
CLOSEPROTECT  --  LABEL  --  DECLARED AT 18210300  --  OCCURS AT 18374000
        18220000
CLOSESHARED  --  LABEL  --  DECLARED AT 18206000  --  OCCURS AT 18350000
        18213000
```

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CLOSEWRITELOCK  --  LABEL  --  DECLARED AT 18206000  --  OCCURS AT 18367000
        18214000
CLOSEXCLUSIVE  --  LABEL  --  DECLARED AT 18207000  --  OCCURS AT 18371000
        18214000  18278000  18374600
CM  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16167000
        16063000
CMM  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20511130
        20511100  20511181  20511182  20511184  20511188  20511300  20511306  20511315  20511350  20511370 *20511457*
       *20511480* 20511515 *20511530**20511560**20511590* 20511620  20511660  20511665
CMM  --  REAL ARRAY  --  DECLARED AT 20566100
       *20566755**20566760**20566785* 20566850  20567057  20567097 *20569420* 20571702  20572300  20572500  20572700
       *20572800**20573402**20573410**20573432**20573440* 20573450  20573900  20574100 *20574300**20574400* 20574750
        20574850  20574910  20575050  20575100  20575200  20575550  20575650  20575700 *20576050* 20576216  20576217
        20576230  20576240  20576350  20576500 *20576758* 20576768 *20577025**20577050* 20577300  20577325 *20577600*
       *20577625* 20577675  20577750  20577810  20577815  20577826  20577875  20577975  20578125  20578200  20578375
        20578400  20578425  20578525  20578550  20578575  20578600  20578625  20578650
CMM  --  REAL ARRAY  --  DECLARED AT 20581000
       *20581350**20581950**20582550* 20582600 *20582650**20583050**20583100**20583550* 20583600
CMM  --  REAL ARRAY  --  DECLARED AT 20584000
       *20585450**20585500**20585550**20585610**20585630**20585750* 20586450
CMM  --  REAL ARRAY  --  DECLARED AT 20586800
        20587200  20587250  20587310  20587550  20588050 *20588200**20588250**20588500**20588550* 20588900  20589000
       *20589300**20589400**20589450**20589460**20589470**20589480**20589490*
CMM  --  REAL ARRAY  --  DECLARED AT 20589800
CMM  --  REAL ARRAY  --  DECLARED AT 20591000
       *20591800**20591900* 20592000 *20592250* 20592300  20592400  20592725 *20592900**20593200**20593310**20593320*
        20593350  20593400  20593450  20593650  20593700  20593750  20594350
CMM  --  REAL ARRAY  --  DECLARED AT 20595000
CMM  --  REAL ARRAY  --  DECLARED AT 20596800
CMM  --  REAL ARRAY  --  DECLARED AT 20600010
       *20601850* 20601900 *20603200* 20603250  20605050 *20605340**20605360**20605400* 20605405 *20605480**20605500*
        20606865  20606870  20610350
CMM  --  REAL ARRAY  --  DECLARED AT 20701500
        20704260  20704270 *20716000**20717000**20719000**20720000* 20724000  20725000 *20726000* 20729000  20731000
       *20732000* 20765000  20766000  20769400  20771100  20779000
CMM1  --  REAL  --  DECLARED AT 20586950
       *20587200* 20587550  20588100  20588250  20588900  20589000
CMPLR  --  REAL  --  DECLARED AT 20566100
CMPLR  --  REAL  --  DECLARED AT 20581000
CMPLR  --  REAL  --  DECLARED AT 20584000
       *20585450*
CMPLR  --  REAL  --  DECLARED AT 20586800
CMPLR  --  REAL  --  DECLARED AT 20589800
CMPLR  --  REAL  --  DECLARED AT 20591000
CMPLR  --  REAL  --  DECLARED AT 20595000
CMPLR  --  REAL  --  DECLARED AT 20596800
CMPLR  --  REAL  --  DECLARED AT 20600010
        20604300  20604500
CMPLR  --  REAL  --  DECLARED AT 20701500
CN  --  DEFINE  --  DECLARED AT 18701100
CN  --  DEFINE  --  DECLARED AT 19515000
        19542000  19553000  19566000  19580000  19586000  19588000  19682000  19685560  19685595  19685596
CN  --  REAL  --  DECLARED AT 20566100
        20566817  20566915 *20567045* 20567065 *20567080* 20567105 *20567115* 20567120 *20567158**20567160* 20567166
       *20567178**20567215**20567225**20567235* 20567240  20567250  20567255  20567265  20567270 *20567271**20569260*
       *20569320* 20569610  20569650 *20569670* 20569690 *20569710* 20569730 *20569750* 20569770 *20569780* 20569790
       *20569800* 20569802 *20569804**20569846**20569860* 20569930  20569940 *20569960* 20569970 *20569990* 20570000
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        *20570065* 20570100 *20570130* 20570150 *20570190* 20570210 *20570235**20570250* 20570270  20570310  20570370
         20570400 *20570430* 20570450 *20570462* 20570470  20570500  20570520 *20570575**20573400* 20573410 *20573430*
         20573440 *20573470* 20573480 *20573500* 20573510 *20573850* 20574100 *20574500* 20574700  20576500 *20576600*
         20576700 *20576925* 20577025  20577050 *20577300* 20577325  20577350
CN   --  STREAM VARIABLE  --  DECLARED AT 20566915
        *20566940*
CN   --  REAL  --  DECLARED AT 20581000
        *20581200* 20583700
CN   --  REAL  --  DECLARED AT 20584000
        *20585200* 20585250  20585300 *20585350* 20585355
CN   --  REAL  --  DECLARED AT 20586800
CN   --  REAL  --  DECLARED AT 20589800
        *20590050* 20590200 *20590350**20590500**20590600* 20590650 *20590655**20590670**20590675**20590690**20590695*
        *20590730*
CN   --  REAL  --  DECLARED AT 20591000
        *20591800**20592200**20592400* 20592700 *20593050* 20593060  20593150  20593200 *20593250**20593310**20593320*
         20593850
CN   --  REAL  --  DECLARED AT 20595000
        *20595150**20595350**20595400**20595450* 20595650
CN   --  REAL  --  DECLARED AT 20596800
CN   --  REAL  --  DECLARED AT 20600010
CN   --  REAL  --  DECLARED AT 20701500
        *20712000* 20713000  20714000  20714500 *20716000* 20717000 *20719000* 20720000 *20722000* 20725000 *20726000*
         20727000  20779000 *20780000* 20781000
CNT  --  REAL  --  DECLARED AT 06068400
         06087100 *06091500* 06093700  06093900  06094100 *06094800* 06095000  06095100  06095200
CNT  --  STREAM LABEL  --  DECLARED AT 08291050  --  OCCURS AT 08291125
         08291125
CNT  --  REAL  --  DECLARED AT 20566245
         20566247 *20566675**20566700* 20566805  20566810  20567058  20567098 *20569240* 20569525  20569528  20569529
         20569670  20569710  20569750  20569780  20569800  20569804  20569890  20569935  20569940  20569965  20569970
         20569980  20570040  20570050  20570140  20570160  20570200  20570220  20570560  20570570  20570577  20576230
         20576240
CNT  --  REAL  --  DECLARED AT 28002800
CNT  --  REAL  --  DECLARED AT 28203200
         28233800  28237400 *28240400**28244400**28244600*
CNTCTL  --  INTEGER  --  DECLARED AT 38005000
        *38024000* 38025000  38028000  38030000
CNTCTL  --  INTEGER  --  DECLARED AT 38102500
         38106600 *38122500**38129000**38141500**38143000**38144500**38149000*
CNTCTL  --  INTEGER  --  DECLARED AT 38200500
         38204600 *38241000**38242500**38245500**38259000**38260500*
CNTCTL  --  INTEGER  --  DECLARED AT 39003000
         39027000 *39237000**39241000**39293200*
CNTLBITS  --  REAL SUBROUTINE  --  DECLARED AT 38106500
         38106600  38107100
CNTLBITS  --  REAL SUBROUTINE  --  DECLARED AT 38204500
         38204600  38205100  38270500
CNTLBITS  --  REAL SUBROUTINE  --  DECLARED AT 39026000
         39027000  39032000
CNTRS  --  INTEGER  --  DECLARED AT 24107000
        *24128000**24131000* 24132000  24133000 *24141000**24142000* 24143000
COBOL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
         00374000  00375000
COBOL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00385500
         00385000  00385500
COBOL  --  DEFINE  --  DECLARED AT 20235100
```

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        20585200  20585355  20604300
COBOL  -- REAL  -- VALUE PARAMETER  -- DECLARED AT 37179000
        37177000  37178000  37180100  37225050
COBOL  -- REAL  -- VALUE PARAMETER  -- DECLARED AT 37386000
        37385000  37385500  37388400  37388700  37388800  37394025
COBOL  -- INTEGER  -- DECLARED AT 38004000
        38023000  38024100 *38024200* 38027100 *38027200* 38041000  38044000  38049200  38052000  38053500  38061000
        38062000  38072000  38082400  38092900
COBOL  -- INTEGER  -- DECLARED AT 38102400
        38113000
COBOL  -- INTEGER  -- DECLARED AT 38200400
        38243500  38262500  38270000  38279000
COBOL  -- INTEGER  -- DECLARED AT 38360000
        38389000  38389100  38391020  38528000
COBOL  -- INTEGER  -- DECLARED AT 38545000
        38586000
COBOL  -- INTEGER  -- DECLARED AT 38653000
        38682000
COBOL  -- INTEGER  -- DECLARED AT 39003000
        39041000 *39091100* 39092010  39145200  39146000  39147000  39233000  39304000
COBOL  -- INTEGER  -- DECLARED AT 41002000
       *41051000* 41051100  41212100
COBOLDCWR  -- LABEL  -- DECLARED AT 14628000  -- OCCURS AT 14660500
        14632200
COBOLFIBAREAV  -- DEFINE  -- DECLARED AT 00017250
COBOL68  -- DEFINE  -- DECLARED AT 20235080
COB68  -- REAL  -- DECLARED AT 15066000
       *15073000* 15080900  15102900
CODE  -- REAL  -- NAME PARAMETER  -- DECLARED AT 01240000
        01240100
CODE  -- REAL  -- VALUE PARAMETER  -- DECLARED AT 08098700
        08098600  08098650  08101650  08102000  08102050  08102700  08104550  08105450  08105600  08106020
CODE  -- STREAM VARIABLE  -- DECLARED AT 08737000
       *08742000* 08743000 *08752000**08753000*
CODE  -- REAL  -- DECLARED AT 14624100
        14634000 *14645800* 14658000 *14682000* 14686000  14691000
CODE  -- STREAM VARIABLE  -- DECLARED AT 14691000
        14692000
CODE  -- REAL  -- DECLARED AT 15063000
        15074000  15080000  15082100 *15094000* 15095000  15096000  15097000  15097500 *15098000**15099000* 15100000
        15101000  15102000
CODE  -- LABEL  -- DECLARED AT 22236000  -- OCCURS AT 22352000
        22303000
CODE  -- INTEGER  -- DECLARED AT 38359000
        38419000  38426000  38429000  38503000  38510000  38518000
CODE  -- INTEGER  -- DECLARED AT 38544000
        38581100
CODE  -- INTEGER  -- DECLARED AT 38652000
        38752000  38774000  38778000  38782000  38787000  38799000 *38817000*
CODE  -- INTEGER  -- DECLARED AT 41002000
       *41038000**41187000* 41190700  41212000
CODEADDRESS  -- DEFINE  -- DECLARED AT 02697710
        14203000
CODEAREAV  -- DEFINE  -- DECLARED AT 00017200
        02216000  14364300  16853000  22303000
CODEIN  -- LABEL  -- DECLARED AT 14166100  -- OCCURS AT 14203020
        14186152
```

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CODEOLAY  --  DEFINE  --  DECLARED AT 00416730
CODEOVERLAY  --  SUBROUTINE  --  DECLARED AT 22254000
        22286000  22371220  22423500
CODES  --  REAL  --  DECLARED AT 06462100
        06462105 *06464000* 06464400  06464800  06465100  06465850
COMINIT  --  LABEL  --  DECLARED AT 00009000  --  OCCURS AT 48022000
        48019500  48111000
COMJOB  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20605050
        20604750
COMMA  --  DEFINE  --  DECLARED AT 20213000
        20379000  20424000  20430000  20436000  20484050  20567115  20570250  20570520  20573470  20576600  20579900
        20590650  20590670  20590690  20593850  20780000
COMMON  --  REAL  --  DECLARED AT 12501500
        12581000  12667750  12670000  12675500  12676000  12680250  12686500  12706500 *12755500**12756500*
COMMON  --  REAL  --  DECLARED AT 12801500
        12849500
COMMON  --  REAL  --  DECLARED AT 13002000
        13094000
COMMON  --  REAL  --  DECLARED AT 19696100
       *19738200* 19776100
COMMON  --  LABEL  --  DECLARED AT 22063000  --  OCCURS AT 22222000
        22098000  22103000  22201000  22207000  22209700  22213000
COMMON  --  REAL  --  DECLARED AT 28000400
       *28070600*
COMMON  --  REAL  --  DECLARED AT 28200400
        28290600 *28294600*
COMMON  --  REAL  --  DECLARED AT 28400400
       *28435800* 28437000  28437800  28438200  28452000  28452400  28453400  28454200  28455600  28456400  28456600
COMMON  --  STREAM VARIABLE  --  DECLARED AT 28438200
COMMON  --  REAL  --  DECLARED AT 28802000
        28857000  28858000
COMMONV  --  DEFINE  --  DECLARED AT 20232000
COMMUNICATE0  --  PROCEDURE  --  DECLARED AT 18700000  --  FORWARD AT 00478000
        18872000  19526200
COMMUNICATE1  --  PROCEDURE  --  DECLARED AT 18500000  --  FORWARD AT 00478500
        18599000  19526100
COMPARE  --  REAL STREAM PROCEDURE  --  DECLARED AT 28421600
       *28423400* 28468200  28476800
COMPGO  --  REAL  --  DECLARED AT 38366020
       *38444000* 38494000
COMPGO  --  REAL  --  DECLARED AT 38562000
COMPGO  --  REAL  --  DECLARED AT 38659000
COMPGO  --  REAL  --  DECLARED AT 41017200
COMPI  --  DEFINE  --  DECLARED AT 20220000
COMPILE  --  LABEL  --  DECLARED AT 20597650  --  OCCURS AT 20603750
        20597950
COMPILEJOB  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20605000
        20604650
COMPLAIN  --  SUBROUTINE  --  DECLARED AT 08115800
        08116100  08117100
COMPLETE  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18345000
        18438210
COMPLEXSLEEP  --  DEFINE  --  DECLARED AT 01240200
        02258000  04568366  06203700  06360530  06463300  07427630  09635000  12710000  12861500  14193100  14279550
        14292150  14358386  14378000  14582000  15114700  17906250  17915000  18029000  18032000  18540200  18559500
        18580400  18840900  19799060  19900670  20582440  28085600  28096800  28242000  28293600  28848000  28852100
        36007000  37046760  37189250  37227000  37241400  37324000  45135230
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COMPLEXSN007E  --  PROCEDURE  --  DECLARED AT 01240000
        02258000  04568366  06203700  06360540  06463300  07427630  09635000  12710000  12861500  12900000  14193100
        14279550  14292150  14358386  14378100  14582000  15114700  17906250  17915000  18029000  18032000  18540200
        18559500  18580410  18840900  19799070  19900670  20582440  28085800  28096800  28242000  28293800  28848000
        28852100  36007000  37046800  37189500  37227000  37241400  37324000  45135230
COM11  --  PROCEDURE  --  DECLARED AT 14623000  --  FORWARD AT 00475000
        14272000  14714000  19578000
COM13  --  PROCEDURE  --  DECLARED AT 15060000  --  FORWARD AT 00477000
        15106000  19580000
COM19  --  PROCEDURE  --  DECLARED AT 13000000  --  FORWARD AT 00483000
        12665500  19586000
COM2  --  PROCEDURE  --  DECLARED AT 19300000
        19305000  19542000
COM23  --  PROCEDURE  --  DECLARED AT 07004000  --  FORWARD AT 00487000
        07242000  19588000
COM5  --  PROCEDURE  --  DECLARED AT 14343000  --  FORWARD AT 00469000
        02329000  14353000  19553000
CONFLICT  --  LABEL  --  DECLARED AT 05952620  --  OCCURS AT 05976650
        05976450
CONFLICT  --  REAL  --  DECLARED AT 06068900
       *06090900* 06091200  06112500 *06113100*
CONQUER  --  REAL PROCEDURE  --  DECLARED AT 15168000
        15176000  15177000 *15187500* 18790400
CONTINUE  --  REAL  --  DECLARED AT 07008200
       *07039200**07039300* 07059110  07118550  07139520  07179205
CONTINUE  --  LABEL  --  DECLARED AT 07299600  --  OCCURS AT 07330050
        07314290
CONTINUE  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08860000
        08868000
CONTINUE  --  LABEL  --  DECLARED AT 12513000  --  OCCURS AT 12746000
        12714500  12718500  12724500
CONTINUE  --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20025200
        20023200  20037500  20047000
CONTINUE  --  LABEL  --  DECLARED AT 20146600  --  OCCURS AT 20151800
        20146900
CONTINUE  --  LABEL  --  DECLARED AT 28403000  --  OCCURS AT 28430600
        28446000
CONTINUE  --  LABEL  --  DECLARED AT 44207250  --  OCCURS AT 44276500
        44273500
CONTINUED  --  DEFINE  --  DECLARED AT 19696500
        19696800  19697300
CONTINUEING  --  DEFINE  --  DECLARED AT 20018900
        20023200  20037400  20046900
CONTINUEING  --  DEFINE  --  DECLARED AT 20087800
CONTINUEING  --  DEFINE  --  DECLARED AT 20148000
        20185800  20199400
CONTINUITYBIT  --  PROCEDURE  --  DECLARED AT 08171000  --  FORWARD AT 02111600
        08181000  14047000  48106000
CONTROLA  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20604300
        20604115  20608076
CONTROLCARD  --  PROCEDURE  --  DECLARED AT 20597550  --  FORWARD AT 00427000
        02347430  06353650  07449000  14541100  16522000  16523000  18438180  18522700  20600760  20610650  22212400
        28440200  38732100
CONTROLCARDAREAV  --  DEFINE  --  DECLARED AT 00017562
        07087000  14533000  18438120  18520600  28435000
CONTROLER  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20604150
        20604050  20604950  20605150
```

```
CONVERT  --  STREAM LABEL  --  DECLARED AT 08820000  --  OCCURS AT 08823000
        08821000
CONVERTIME  --  REAL SUBROUTINE  --  DECLARED AT 08529000
        08533100  08534000  08537000  08538500
COOLOFF  --  SUBROUTINE  --  DECLARED AT 38370700
        38376000  38391050  38394300  38397000  38411030
COOLOFF  --  SUBROUTINE  --  DECLARED AT 38552000
        38559000  38581500  38589000
COOLOFF  --  SUBROUTINE  --  DECLARED AT 38665000
        38672000  38691000  38699000  38746000  38751000  38798000
COPNBIT  --  DEFINE  --  DECLARED AT 00417040
COPNMESS  --  DEFINE  --  DECLARED AT 00415000
        38103700  38201700  41191300
COPY  --  REAL  --  DECLARED AT 08283000
       *08291460**08291750* 08295200  08296350 *08296375* 08298000
COPY  --  REAL  --  DECLARED AT 12503000
       *12676000**12680250* 12686500 *12707250*
COPY  --  REAL  --  DECLARED AT 12803000
        12849500 *12850000*
COPY  --  REAL  --  DECLARED AT 13004000
COPYAROW  --  SUBROUTINE  --  DECLARED AT 28238800
        28259400
COPYF  --  DEFINE  --  DECLARED AT 12516200
        12676000
COPYF  --  DEFINE  --  DECLARED AT 12815300
COPYING  --  DEFINE  --  DECLARED AT 28009300
        28011810  28084100
COPYING  --  DEFINE  --  DECLARED AT 28209900
        28246700  28258600  28261100
COPYN  --  DEFINE  --  DECLARED AT 20221500
        20448050  20449100  20461300  20461810  20470000  20475100  20566807  20566822  20567260  20567600  20569590
        20569810  20570280  20570290
COPYO  --  DEFINE  --  DECLARED AT 12516350
COPYO  --  DEFINE  --  DECLARED AT 12815600
        12849500
CORE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019300
        00019100  00019200
CORE  --  REAL  --  DECLARED AT 00426000
       *08829000* 08833000  08838000  08839000 *14411200* 20163700  20165300 *20170600**20176105**44201300**44201600*
       *44202000**44213500*
CORE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 06003000
        06000000  06001000 *06004100* 06010000  06012000  06013000
CORE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06063000
        06061500  06062000  06065000
CORE  --  REAL  --  DECLARED AT 22235000
       *22267000* 22268000  22273000  22278000 *22284200* 22284300  22284500 *22286060* 22286070  22286110 *22390000*
        22391000
COREINDX  --  DEFINE  --  DECLARED AT 12217500
        12251000  12274000
COREINDX  --  DEFINE  --  DECLARED AT 12368000
        12395500  12465000
COREND  --  REAL PROCEDURE  --  DECLARED AT 44441000  --  FORWARD AT 08303200
        08303300  44104000  44120000  44128000  44149000  44201300  46000000
COREPRINT  --  PROCEDURE  --  DECLARED AT 15600000
        15604900  16788000
CORESEARCH  --  SUBROUTINE  --  DECLARED AT 12384000
        12402500  12429500
```

```
COREST  --  DEFINE  --  DECLARED AT 00416740
COREV  --  DEFINE  --  DECLARED AT 20232500
        20504500
COUNT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07268100
        07268000  07268100  07281100  07295010
COUNT  --  REAL  --  DECLARED AT 17000800
       *17000900* 17001300
COUNT  --  REAL  --  DECLARED AT 24042550
       *24044300*
COUNT  --  INTEGER  --  DECLARED AT 24205000
       *24211000* 24213000  24226000
COUNT  --  INTEGER  --  DECLARED AT 37180200
       *37186500**37187120**37195030* 37195200  37195600  37196200 *37201000**37207000* 37209000 *37210250* 37221160
        37221200 *37221220**37221240**37235250* 37240050  37240100 *37240300*
CP  --  LABEL  --  DECLARED AT 37007000  --  OCCURS AT 37058000
        37008000  37046855
CP  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38735000
        38662000
CP  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
CPT  --  INTEGER  --  DECLARED AT 08528000
       *08534000* 08540000
CPY  --  STREAM VARIABLE  --  DECLARED AT 08285000
        08291050
CR  --  REAL  --  DECLARED AT 19694000
       *19739000* 19767760
CR  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38699000
        38662000
CR  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
CRD  --  STREAM VARIABLE  --  DECLARED AT 20607040
        20607260
CREATIONDATE  --  DEFINE  --  DECLARED AT 08101000
        08114350
CS  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16613000
        16366000
CS  --  LABEL  --  DECLARED AT 41316500  --  OCCURS AT 41318250
        41318810
CSW  --  SWITCH LABEL  --  DECLARED AT 04070000
        04075000
CT  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16802500
        16704500  16705000
CTC  --  FIELD  --  DECLARED AT 00060120
        02173275  02173294  02287110  04285000  04377600  04634200  04675900  04676000  04676150  04676300  04676500
        04676850  04683000  04683100  04683950  04684050  06016100  06107400  06417500  06421000  06463900  08104600
        09508700  12655500  13128000  14209300  14212010  14282000  18845400  19900440  19900550  20149200  20150100
        20169600  20176033  20289055  20567340  20567360  20567530  20569460  20569890  20581130  20584330  20587120
        20588700  20590020  20591620  20595090  20596947  20597460  20600760  20708000  22264000  22270300  22273000
        22278000  22279000  22284500  22286090  22286110  22286120  22331800  22334200  22335200  22336000  22402000
        24009000  24011000  24017000  24027000  24035400  24035600  24039300  24039600  28049400  28069800  28246000
        28431000  38044000  38048000  38100000  38110500  38192000  38210500  38240500  38248500  38249000  38298500
        38387000  38538000  38581000  38646000  38696000  38819000  39147000  40311100  40317800  42525130  42525150
        44240600  44240695  44242020  44281500  45075590  45248000  48032930
CTF  --  FIELD  --  DECLARED AT 00060110
        02019000  02434445  04137120  04300600  04352600  04419400  04671850  04671900  04674000  05976800  06011000
        06090800  06093900  06094100  06109000  06360516  06411010  06463260  07179200  07503500  09508800  12897500
        14212000  14279250  14293000  14354000  14358383  14581700  15601500  16124000  17003100  18017000  18241000
```

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        18273055  18540120  18581400  18844400  19575000  19697400  19768700  19796000  19900450  19900560  19903100
        19904350  19904450  20080100  20119900  20140200  20178900  20195700  20569890  20580340  20583710  20586625
        20589610  20590751  20594751  20596651  20597460  20601600  20610400  20783000  22328400  24010000  24018000
        24019000  24025000  24035700  24035800  24038900  24039100  24039200  24146000  24223000  28011850  28021800
        28033800  28034000  28041400  28042600  28044800  28046000  28059600  28074600  28082200  28089200  28090200
        28090400  28091800  28095000  28101200  28213000  28216400  28223000  28223200  28230000  28232600  28256400
        28258400  28262200  28273000  28303200  28463400  28478400  28833000  36006500  37046735  37225800  37292800
        37394700  37429000  38100000  38105400  38158000  38192000  38203400  38240500  38246500  38248500  38249000
        38298500  38442200  38538000  38590000  38646000  38819000  41332300  41333500  42501400  44113000  44114000
        44123000  44124000  44126000  44130000  44216940  44240640  44240695  44248000  45122000  45248000  48032935
CU -- LABEL -- DECLARED AT 16700000 -- OCCURS AT 16787500
        16704500
CUED -- REAL -- DECLARED AT 22235000
CURBLKCNTR -- DEFINE -- DECLARED AT 00067040
        31014000  31015000  42488100  42506000
CURLOC -- INTEGER -- DECLARED AT 37388100
       *37406000* 37407000  37408000  37412000  37413000  37414000 *37416000*
CURRENT -- REAL -- VALUE PARAMETER -- DECLARED AT 00385500
        00385000  00385500
CURRENT -- REAL -- VALUE PARAMETER -- DECLARED AT 37386000
        37385000  37385500  37388400  37388800  37389000  37390000  37393000 *37398000*
CURROW -- REAL -- DECLARED AT 12504000
        12505000 *12564000**12628500**12633000**12633500* 12634000 *12642000* 12643500
CURROW -- REAL -- DECLARED AT 12804000
        12805000
CURROW -- REAL -- DECLARED AT 13005000
        13006000 *13044000* 13049000
CUTY -- LABEL -- DECLARED AT 16053000 -- OCCURS AT 16178000
CX -- STREAM VARIABLE -- DECLARED AT 06074100
        06074600  06074700  06074800 *06075100**06075200**06075300**06075800**06075900**06076100**06076600*
CX -- STREAM VARIABLE -- DECLARED AT 06078000
        06078500  06079800 *06080300* 06081500 *06081800**06082000**06082800**06082900*
CX -- STREAM VARIABLE -- DECLARED AT 16823100
        16823500 *16823600**16824100**16824700* 16824800
CYC -- STREAM VARIABLE -- DECLARED AT 12306500
        12315000
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 00373000
        00371000  00372000
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 00376000
        00374000  00375000
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 02637000
        02635000  02636000  02641000
CYCLE -- STREAM VARIABLE -- DECLARED AT 02641000
        02651000
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 37002000
        37000000  37001000  37046178  37046192  37046730  37174200
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 37179000
        37177000  37178000  37194000  37195500  37216000  37224200  37240200  37248500  37260000
CYCLE -- REAL -- VALUE PARAMETER -- DECLARED AT 37342000
        37337000  37339000
CYCLE -- INTEGER -- DECLARED AT 38007000
CYCLE -- INTEGER -- DECLARED AT 38102700
        38105000  38105800  38113000  38151000
CYCLE -- INTEGER -- DECLARED AT 38200700
        38203000  38203800  38213500 *38273500* 38275500  38296750
CYCLE -- INTEGER -- DECLARED AT 39004100
       *39087500* 39143000
```

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CYCLETOG  --  REAL  --  DECLARED AT 12204500
      *12247000**12269000* 12306000
CYCLETOG  --  STREAM VARIABLE  --  DECLARED AT 12306000
      12314500
CZ  --  LABEL  --  DECLARED AT 05847800
CZ  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05975630
      05955800
CO  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04077000
      04070000  04077000
CO  --  LABEL  --  DECLARED AT 18500600  --  OCCURS AT 18510100
      18501800
CO  --  LABEL  --  DECLARED AT 18700600
CO  --  LABEL  --  DECLARED AT 19506000
C1  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04078000
      04070000
C1  --  STREAM VARIABLE  --  DECLARED AT 06074100
     *06074400* 06075100  06076100  06076600
C1  --  STREAM VARIABLE  --  DECLARED AT 06078000
     *06078300* 06081800  06082900
C1  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08861000
      08864000
C1  --  LABEL  --  DECLARED AT 18500600
C1  --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18710100
      18701300
C1  --  LABEL  --  DECLARED AT 19506000
C10  --  LABEL  --  DECLARED AT 18500600
C10  --  LABEL  --  DECLARED AT 18700600
C10  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19566000
      19511000
C11  --  LABEL  --  DECLARED AT 18500600
C11  --  LABEL  --  DECLARED AT 18700600
C11  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19568000
      19511000
C12  --  LABEL  --  DECLARED AT 18500600
C12  --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18760100
      18701400
C12  --  LABEL  --  DECLARED AT 19506000
C13  --  LABEL  --  DECLARED AT 18500600
C13  --  LABEL  --  DECLARED AT 18700600
C13  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19580000
      19511000
C14  --  LABEL  --  DECLARED AT 18500600
C14  --  LABEL  --  DECLARED AT 18700600
C14  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19582000
      19511000
C15  --  LABEL  --  DECLARED AT 18500600  --  OCCURS AT 18530100
      18501900
C15  --  LABEL  --  DECLARED AT 18700600
C15  --  LABEL  --  DECLARED AT 19506000
C16  --  LABEL  --  DECLARED AT 18500600  --  OCCURS AT 18540100
      18501900  18540400
C16  --  LABEL  --  DECLARED AT 18700600
C16  --  LABEL  --  DECLARED AT 19507000
C17  --  LABEL  --  DECLARED AT 18500700
C17  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18770100
      18701400
C17  --  LABEL  --  DECLARED AT 19507000
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C18  --  LABEL  --  DECLARED AT 18500700
C18  --  LABEL  --  DECLARED AT 18700700
C18  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19584300
         19512000
C19  --  LABEL  --  DECLARED AT 18500700
C19  --  LABEL  --  DECLARED AT 18700700
C19  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19586000
         19512000
C2   --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04097000
         04070000  04079000  04087000
C2   --  STREAM VARIABLE  --  DECLARED AT 06074100
        *06074700* 06075200  06075800
C2   --  STREAM VARIABLE  --  DECLARED AT 06078100
        *06079900* 06082400  06083200
C2   --  LABEL  --  DECLARED AT 18500600
C2   --  LABEL  --  DECLARED AT 18700600
C2   --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19542000
         19511000
C20  --  LABEL  --  DECLARED AT 18500700
C20  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18780100
         18701400
C20  --  LABEL  --  DECLARED AT 19507000
C21  --  LABEL  --  DECLARED AT 18500700
C21  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18790100
         18701500  18791700
C21  --  LABEL  --  DECLARED AT 19507000
C21A --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18790600
C22  --  LABEL  --  DECLARED AT 18500700
C22  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18800100
         18701500
C22  --  LABEL  --  DECLARED AT 19507000
C23  --  LABEL  --  DECLARED AT 18500700
C23  --  LABEL  --  DECLARED AT 18700700
C23  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19588000
         19512000
C24  --  LABEL  --  DECLARED AT 18500700
C24  --  LABEL  --  DECLARED AT 18700700
C24  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19590000
         19512000
C25  --  LABEL  --  DECLARED AT 18500700
C25  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18810100
         18701500
C25  --  LABEL  --  DECLARED AT 19507000
C26  --  LABEL  --  DECLARED AT 18500700
C26  --  LABEL  --  DECLARED AT 18700700  --  OCCURS AT 18820100
         18701500
C26  --  LABEL  --  DECLARED AT 19507000
C27  --  LABEL  --  DECLARED AT 18500800
C27  --  LABEL  --  DECLARED AT 18700800
C27  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19602000
         19512000
C28  --  LABEL  --  DECLARED AT 18500800
C28  --  LABEL  --  DECLARED AT 18700800
C28  --  LABEL  --  DECLARED AT 19507000  --  OCCURS AT 19639000
         19512000
C29  --  LABEL  --  DECLARED AT 18500800
C29  --  LABEL  --  DECLARED AT 18700800  --  OCCURS AT 18830000
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          18701500
C29   --  LABEL  --  DECLARED AT 19508000
C3    --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04080000
          04070000
C3    --  LABEL  --  DECLARED AT 18500600
C3    --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18720100
          18701300
C3    --  LABEL  --  DECLARED AT 19506000
C3A   --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18720200
          18850200
C30   --  LABEL  --  DECLARED AT 18500800  --  OCCURS AT 18550100
          18502000
C30   --  LABEL  --  DECLARED AT 18700800
C30   --  LABEL  --  DECLARED AT 19508000
C30A  --  LABEL  --  DECLARED AT 18501000  --  OCCURS AT 18557100
          18555400  18555900
C30B  --  LABEL  --  DECLARED AT 18501000  --  OCCURS AT 18557200
          18555300  18556500  18556800
C31   --  LABEL  --  DECLARED AT 18500800  --  OCCURS AT 18559000
          18502100
C31   --  LABEL  --  DECLARED AT 18700800
C31   --  LABEL  --  DECLARED AT 19508000
C32   --  LABEL  --  DECLARED AT 18500800  --  OCCURS AT 18560000
          18502100
C32   --  LABEL  --  DECLARED AT 18700800
C32   --  LABEL  --  DECLARED AT 19508000
C33   --  LABEL  --  DECLARED AT 18500900  --  OCCURS AT 18570000
          18502100
C33   --  LABEL  --  DECLARED AT 18700900
C33   --  LABEL  --  DECLARED AT 19508000
C34   --  LABEL  --  DECLARED AT 18500900
C34   --  LABEL  --  DECLARED AT 18700900
C34   --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19680200
          19513000
C35   --  LABEL  --  DECLARED AT 18500900
C35   --  LABEL  --  DECLARED AT 18700900
C35   --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19681000
          19513000
C36   --  LABEL  --  DECLARED AT 18500900
C36   --  LABEL  --  DECLARED AT 18700900
C36   --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19683000
          19513000
C37   --  LABEL  --  DECLARED AT 18500900
C37   --  LABEL  --  DECLARED AT 18700900
C37   --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19685010
          19513000
C38   --  LABEL  --  DECLARED AT 18500900
C38   --  LABEL  --  DECLARED AT 18700900  --  OCCURS AT 18840000
          18701600
C38   --  LABEL  --  DECLARED AT 19508000
C39   --  LABEL  --  DECLARED AT 18500900
C39   --  LABEL  --  DECLARED AT 18700900  --  OCCURS AT 18850000
          18701600
C39   --  LABEL  --  DECLARED AT 19508000
C4    --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04081000
          04070000
C4    --  LABEL  --  DECLARED AT 18500600  --  OCCURS AT 18520100
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        18501800
C4  --  LABEL  --  DECLARED AT 18700600
C4  --  LABEL  --  DECLARED AT 19506000
C40  --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19685340
        19513000
C41  --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19685550
        19513000
C42  --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19685560
        19513010
C43  --  LABEL  --  DECLARED AT 19508000  --  OCCURS AT 19685570
        19513010
C44  --  LABEL  --  DECLARED AT 19508010  --  OCCURS AT 19685595
        19513010
C45  --  LABEL  --  DECLARED AT 18500900  --  OCCURS AT 18580000
        18502200
C45  --  LABEL  --  DECLARED AT 18700900
C46  --  LABEL  --  DECLARED AT 19508010  --  OCCURS AT 19685596
        19513010
C47  --  LABEL  --  DECLARED AT 18500900
C47  --  LABEL  --  DECLARED AT 18700900  --  OCCURS AT 18860000
        18701700
C48  --  LABEL  --  DECLARED AT 18500900
C48  --  LABEL  --  DECLARED AT 18700900  --  OCCURS AT 18870100
        18701700
C49  --  LABEL  --  DECLARED AT 18500900  --  OCCURS AT 18590000
        18502200
C49  --  LABEL  --  DECLARED AT 18700900
C49A  --  LABEL  --  DECLARED AT 18501000
C5  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04095000
        04070000  04082000  04092000
C5  --  LABEL  --  DECLARED AT 18500600
C5  --  LABEL  --  DECLARED AT 18700600
C5  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19553000
        19511000
C6  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04083000
        04070000
C6  --  LABEL  --  DECLARED AT 18500600
C6  --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18730100
        18701300
C6  --  LABEL  --  DECLARED AT 19506000
C7  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04088000
        04070000
C7  --  LABEL  --  DECLARED AT 18500600
C7  --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18740100
        18701300
C7  --  LABEL  --  DECLARED AT 19506000
C8  --  LABEL  --  DECLARED AT 18500600
C8  --  LABEL  --  DECLARED AT 18700600  --  OCCURS AT 18750100
        18701300
C8  --  LABEL  --  DECLARED AT 19506000
C9  --  LABEL  --  DECLARED AT 18500600
C9  --  LABEL  --  DECLARED AT 18700600
C9  --  LABEL  --  DECLARED AT 19506000  --  OCCURS AT 19560000
        19511000
D  --  STREAM VARIABLE  --  DECLARED AT 00042000
D  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
        00379600
```

```
D  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00432000
D  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
        00452600  00452700
D  --  STREAM VARIABLE  --  DECLARED AT 00652000
D  --  STREAM VARIABLE  --  DECLARED AT 00657000
D  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02052800
        02052700
D  --  STREAM VARIABLE  --  DECLARED AT 02276400
D  --  STREAM VARIABLE  --  DECLARED AT 02281000
D  --  STREAM VARIABLE  --  DECLARED AT 02347350
D  --  REAL  --  DECLARED AT 02382000
        *02387000**02389000**02390000* 02391000
D  --  REAL  --  DECLARED AT 02434120
        *02434520*
D  --  STREAM VARIABLE  --  DECLARED AT 04105300
D  --  STREAM VARIABLE  --  DECLARED AT 04280400
D  --  STREAM VARIABLE  --  DECLARED AT 04285000
D  --  STREAM VARIABLE  --  DECLARED AT 04568550
D  --  STREAM VARIABLE  --  DECLARED AT 04588320
D  --  STREAM VARIABLE  --  DECLARED AT 04588460
D  --  STREAM VARIABLE  --  DECLARED AT 04655000
D  --  STREAM VARIABLE  --  DECLARED AT 04679050
D  --  STREAM VARIABLE  --  DECLARED AT 04680350
D  --  STREAM VARIABLE  --  DECLARED AT 04681450
D  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05844200
        05842410  05843300  05843500
D  --  INTEGER  --  DECLARED AT 05847700
        05848255 *05849420**05849500* 05850110  05850130  05851220
D  --  INTEGER  --  DECLARED AT 05951800
        05952230  05953000  05958600 *05961000* 05961200  05961600 *05968900* 05971200  05971600  05971800  05972000
D  --  STREAM VARIABLE  --  DECLARED AT 05953000
D  --  STREAM VARIABLE  --  DECLARED AT 05958600
D  --  STREAM VARIABLE  --  DECLARED AT 06013000
D  --  STREAM VARIABLE  --  DECLARED AT 06022300
D  --  INTEGER  --  DECLARED AT 06069100
        06088900  06101000 *06109200* 06109300  06110500  06113400
D  --  REAL  --  DECLARED AT 07006160
        *07109000* 07139500  07139512  07167000  07171000
D  --  STREAM VARIABLE  --  DECLARED AT 07139512
D  --  STREAM VARIABLE  --  DECLARED AT 07256600
D  --  REAL  --  DECLARED AT 07355200
        *07371200* 07371800  07371900  07374200
D  --  REAL  --  DECLARED AT 08099500
        08104900  08105250  08106040  08106350  08112200
D  --  STREAM VARIABLE  --  DECLARED AT 08106350
        08106450
D  --  STREAM VARIABLE  --  DECLARED AT 08112200
        08112650
D  --  REAL ARRAY  --  DECLARED AT 08255600
        *08267500* 08268950  08269100  08269200  08269300  08269400  08269530  08269600 *08269800* 08270000  08270200
        08270450  08270600
D  --  REAL  --  DECLARED AT 08318000
        08325000 *08327000* 08330000 *08332000* 08332200
D  --  INTEGER  --  DECLARED AT 08344000
        *08370000* 08371000
D  --  STREAM VARIABLE  --  DECLARED AT 08371000
        08372000
```

```
D  --  REAL  --  DECLARED AT 08377000
       *08381100* 08385300
D  --  STREAM VARIABLE  --  DECLARED AT 08473000
D  --  STREAM VARIABLE  --  DECLARED AT 08571800
        08571900
D  --  STREAM VARIABLE  --  DECLARED AT 08605000
        08614000
D  --  STREAM VARIABLE  --  DECLARED AT 08690100
        08690300
D  --  STREAM VARIABLE  --  DECLARED AT 08718000
D  --  STREAM VARIABLE  --  DECLARED AT 09535100
D  --  STREAM VARIABLE  --  DECLARED AT 12468000
D  --  STREAM VARIABLE  --  DECLARED AT 12473210
D  --  STREAM VARIABLE  --  DECLARED AT 12823000
D  --  STREAM VARIABLE  --  DECLARED AT 12851000
D  --  REAL  --  DECLARED AT 14158000
       *14186000* 14186010  14186020  14187000  14203400  14203500  14206310  14208000  14212200  14225000  14230000
        14234000  14279000  14299000
D  --  STREAM VARIABLE  --  DECLARED AT 14431530
D  --  STREAM VARIABLE  --  DECLARED AT 14570100
D  --  STREAM VARIABLE  --  DECLARED AT 14645800
D  --  STREAM VARIABLE  --  DECLARED AT 14711000
        14712000
D  --  STREAM VARIABLE  --  DECLARED AT 15404000
        15417000
D  --  STREAM VARIABLE  --  DECLARED AT 15427000
       *15430000* 15431000  15436000
D  --  STREAM VARIABLE  --  DECLARED AT 15438060
       *15438080* 15438090  15438130
D  --  REAL  --  DECLARED AT 15600300
        15602600  15602640 *15604250* 15604600
D  --  STREAM VARIABLE  --  DECLARED AT 15602600
D  --  STREAM VARIABLE  --  DECLARED AT 15602640
D  --  STREAM VARIABLE  --  DECLARED AT 15604250
D  --  STREAM VARIABLE  --  DECLARED AT 15615000
D  --  STREAM VARIABLE  --  DECLARED AT 16088000
D  --  STREAM VARIABLE  --  DECLARED AT 16592000
D  --  STREAM VARIABLE  --  DECLARED AT 16828200
D  --  STREAM VARIABLE  --  DECLARED AT 16854800
D  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18710700
        18701200
D  --  REAL ARRAY  --  DECLARED AT 19692000
       *19761000* 19764000  19766000  19766100  19766200  19766300  19766400  19766500
D  --  STREAM VARIABLE  --  DECLARED AT 20127300
        20127600
D  --  STREAM VARIABLE  --  DECLARED AT 20172100
D  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20382015
        20382010 *20382660*
D  --  SWITCH LABEL  --  DECLARED AT 20394000
        20450000
D  --  STREAM VARIABLE  --  DECLARED AT 20511666
D  --  STREAM VARIABLE  --  DECLARED AT 20571702
D  --  STREAM VARIABLE  --  DECLARED AT 20592400
D  --  STREAM VARIABLE  --  DECLARED AT 20595950
        20596000
D  --  STREAM VARIABLE  --  DECLARED AT 20600400
       *20600460*
```

```
D  --  STREAM VARIABLE  --  DECLARED AT 20607060
       *20607180*
D  --  STREAM VARIABLE  --  DECLARED AT 22069060
D  --  STREAM VARIABLE  --  DECLARED AT 28276600
        28276800
D  --  STREAM VARIABLE  --  DECLARED AT 28297800
        28298000
D  --  STREAM VARIABLE  --  DECLARED AT 28831000
D  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
        32000000
D  --  STREAM VARIABLE  --  DECLARED AT 37046192
       *37046205**37046212*
D  --  STREAM VARIABLE  --  DECLARED AT 37046520
D  --  STREAM VARIABLE  --  DECLARED AT 37240700
D  --  STREAM VARIABLE  --  DECLARED AT 37256000
D  --  STREAM VARIABLE  --  DECLARED AT 37284120
D  --  STREAM VARIABLE  --  DECLARED AT 37295000
D  --  STREAM VARIABLE  --  DECLARED AT 37314200
D  --  STREAM VARIABLE  --  DECLARED AT 37344000
D  --  STREAM VARIABLE  --  DECLARED AT 37353000
D  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
        37357300  37357400
D  --  INTEGER  --  DECLARED AT 37388000
        37388100 *37390000* 37391000  37398000
D  --  STREAM VARIABLE  --  DECLARED AT 38104300
D  --  STREAM VARIABLE  --  DECLARED AT 38202300
D  --  STREAM VARIABLE  --  DECLARED AT 38249500
D  --  STREAM VARIABLE  --  DECLARED AT 38271500
D  --  REAL  --  DECLARED AT 38362000
        38422000  38456000  38464000
D  --  STREAM VARIABLE  --  DECLARED AT 38422000
        38423000
D  --  REAL  --  DECLARED AT 38547000
        38587000 *38608100* 38608200  38608400  38608500  38626000
D  --  STREAM VARIABLE  --  DECLARED AT 38587000
D  --  STREAM VARIABLE  --  DECLARED AT 38608500
D  --  STREAM VARIABLE  --  DECLARED AT 38626000
       *38626300*
D  --  REAL  --  DECLARED AT 38655000
        38683000  38711000  38762000  38807000
D  --  STREAM VARIABLE  --  DECLARED AT 38683000
D  --  STREAM VARIABLE  --  DECLARED AT 38711000
        38712000
D  --  STREAM VARIABLE  --  DECLARED AT 38762000
D  --  STREAM VARIABLE  --  DECLARED AT 38807000
D  --  STREAM VARIABLE  --  DECLARED AT 39086000
D  --  STREAM VARIABLE  --  DECLARED AT 39297100
        39297200
D  --  REAL ARRAY  --  DECLARED AT 39902000
        39905000 *39933000**39938000**39944000**39946000* 39948000
D  --  STREAM VARIABLE  --  DECLARED AT 39905000
        39907000
D  --  REAL  --  DECLARED AT 40005210
        40100700  40100900  40101250  40261300 *40290400* 40292050
D  --  STREAM VARIABLE  --  DECLARED AT 40261300
D  --  REAL  --  DECLARED AT 41003000
        41046000 *41047500* 41191000
```

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D  --  STREAM VARIABLE  --  DECLARED AT 41046000
D  --  STREAM VARIABLE  --  DECLARED AT 41324800
D  --  STREAM VARIABLE  --  DECLARED AT 41333010
D  --  STREAM VARIABLE  --  DECLARED AT 41500900
        41501500
D  --  STREAM VARIABLE  --  DECLARED AT 41603100
        41603400  41603500
D  --  STREAM VARIABLE  --  DECLARED AT 41606200
D  --  STREAM VARIABLE  --  DECLARED AT 44093000
       *44095000* 44098000
D  --  STREAM VARIABLE  --  DECLARED AT 44144000
D  --  STREAM VARIABLE  --  DECLARED AT 44240500
        44240540
D  --  STREAM VARIABLE  --  DECLARED AT 44274500
D  --  STREAM VARIABLE  --  DECLARED AT 45155000
DA  --  STREAM VARIABLE  --  DECLARED AT 04325800
        04326400  04329800  04330600 *04332200*
DA  --  REAL  --  DECLARED AT 28002400
       *28062000* 28062200 *28068400* 28093600  28099000
DA  --  REAL  --  DECLARED AT 28202800
        28246800 *28253000* 28254000  28265200  28270810  28270812 *28270830* 28272800  28281550  28281600  28281800
        28282600  28283200  28285800 *28307710* 28307715
DA  --  REAL  --  DECLARED AT 28401000
       *28466800**28467000* 28473200  28474600  28476000
DA  --  DEFINE  --  DECLARED AT 40008140
        40016900  40016910  40016920  40027270  40039000  40047100  40060300  40060305  40060400  40064000  40065020
        40068000  40068100  40078033  40078074  40322400
DAAT  --  STREAM VARIABLE  --  DECLARED AT 20105400
        20106900
DAC  --  DEFINE  --  DECLARED AT 40008140
        40047000  40055000  40056000
DALOC  --  REAL ARRAY  --  DECLARED AT 00333000
        06411000 *06421000**06422000**06423000* 14117000  14360600  18740800 *20128000**20128100* 24210000  44160000
DALOCMAXSZ  --  DEFINE  --  DECLARED AT 06408100
        06411000  06413000
DALOCROW  --  REAL ARRAY  --  DECLARED AT 00333000
        06412000  06416000  06417000 *06417500* 14360700 *20127300* 24150000
DALOCROWAREAV  --  DEFINE  --  DECLARED AT 00017440
        20127300
DALOCSIZE  --  DEFINE  --  DECLARED AT 20087200
        20127300  20127600
DATA  --  REAL  --  DECLARED AT 15402000
        15404000  15424000 *15427000* 15437100 *15438060* 15438150
DATAAREAV  --  DEFINE  --  DECLARED AT 00017210
        22386100  28452600  28457000
DATACOM  --  LABEL  --  DECLARED AT 04358000  --  OCCURS AT 04410200
        04358600
DATACOM  --  LABEL  --  DECLARED AT 22064500  --  OCCURS AT 22219000
        22066000
DATADDRESS  --  DEFINE  --  DECLARED AT 02697730
        14202000  14292100  22331400
DATAOLAY  --  DEFINE  --  DECLARED AT 00416750
DATAV  --  DEFINE  --  DECLARED AT 20226500
        20597000
DATE  --  REAL  --  DECLARED AT 00111000
        02385000  02641000  05953000  05953085 *06188100* 06202100  06241200  06353600  06463984  07549000  08320000
        08333000  08371000  08383000  08385400  08412200  08572520  12699500  12854500 *15622000* 15623000  16600000
```

```
          18455000  18710700 *20157700* 20172800  20289080  20289265  20754000 *22012000* 22014000  22157000 *22909000*
          22910000  28297800  37046192  38013900  38216500  38219000  38274000  41316525  41317780  41320200  41322200
          41334200  41603100 *44216950* 45092140 *45135140* 45135230
DATE  --  STREAM VARIABLE  --  DECLARED AT 02641000
          02649000
DATE  --  STREAM VARIABLE  --  DECLARED AT 05953000
          05953010
DATE  --  STREAM VARIABLE  --  DECLARED AT 05953085
          05953095
DATE  --  STREAM VARIABLE  --  DECLARED AT 06463984
DATE  --  STREAM VARIABLE  --  DECLARED AT 07549000
          07549100
DATE  --  STREAM VARIABLE  --  DECLARED AT 08320000
          08321000
DATE  --  STREAM VARIABLE  --  DECLARED AT 08333000
          08336500
DATE  --  STREAM VARIABLE  --  DECLARED AT 08385400
DATE  --  STREAM VARIABLE  --  DECLARED AT 08412200
          08412300
DATE  --  STREAM VARIABLE  --  DECLARED AT 08572520
          08572530
DATE  --  STREAM VARIABLE  --  DECLARED AT 16600000
          16602000
DATE  --  STREAM VARIABLE  --  DECLARED AT 20172800
          20173000
DATE  --  STREAM VARIABLE  --  DECLARED AT 20289080
          20289085
DATE  --  STREAM VARIABLE  --  DECLARED AT 20289265
          20289285
DATE  --  STREAM VARIABLE  --  DECLARED AT 20754000
          20755000
DATE  --  STREAM VARIABLE  --  DECLARED AT 38219000
          38219500
DATE  --  STREAM VARIABLE  --  DECLARED AT 38274000
          38274500
DATE  --  STREAM VARIABLE  --  DECLARED AT 41316525
          41316530
DATE  --  STREAM VARIABLE  --  DECLARED AT 41317780
DATE  --  STREAM VARIABLE  --  DECLARED AT 41603100
          41603300
DATE  --  STREAM VARIABLE  --  DECLARED AT 45092140
          45092150
DATFOUT  --  DEFINE  --  DECLARED AT 08342000
          08385000  45075600
DAY  --  REAL SUBROUTINE  --  DECLARED AT 08318100
          08318700  08318800  08330000  08332000
DAYS  --  LABEL  --  DECLARED AT 08318900  --  OCCURS AT 08340200
          08332300
DC  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04174000
          04128000  04134800  04134955
DC  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38818000
          38662000
DC  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41281000
          41006000
DCBUFRLS  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14660500
          14632200
DCIN  --  LABEL  --  DECLARED AT 39006100  --  OCCURS AT 39293100
```

```
        39008000
DCINTYPE  --  DEFINE  --  DECLARED AT 00005120
        09633200  44244000
DCN  --  LABEL  --  DECLARED AT 38103300  --  OCCURS AT 38151000
        38151800
DCN  --  LABEL  --  DECLARED AT 38201300  --  OCCURS AT 38296750
        38258500
DCN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39143000
        39092055  39094000  39255000
DCO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39235000
        39050000
DCQPTSTOPPED  --  DEFINE  --  DECLARED AT 00081650
DCQUEUEAREAV  --  DEFINE  --  DECLARED AT 00017430
DCWAITING  --  DEFINE  --  DECLARED AT 00081640
DCWRITER  --  LABEL  --  DECLARED AT 14628000  --  OCCURS AT 14660500
        14632200
DC19  --  LABEL  --  DECLARED AT 38103300  --  OCCURS AT 38152250
        38111000
DC19  --  LABEL  --  DECLARED AT 39006800  --  OCCURS AT 39236000
        39092045
DC19  --  LABEL  --  DECLARED AT 41004100  --  OCCURS AT 41307010
        41006000
DC19QUEUEAREAV  --  DEFINE  --  DECLARED AT 00017490
DD  --  REAL  --  DECLARED AT 06185112
        06195095 *06195125* 06195185
DD  --  STREAM VARIABLE  --  DECLARED AT 06195125
DD  --  NAME  --  DECLARED AT 14162000
       *14192000* 14193000  14193100  14194000  14195000  14199000  14203600  14206140  14213000  14223000  14224000
        14225000  14226000  14227100  14227210  14228000
DD  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16156000
        16063000
DDD  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 08438900
DDD  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 39900000
        39962000  39965000 *39966000*
DDD  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 40003000
        40000000  40001000  40008340  40280000 *40281100* 40283100 *40283200**40283300**40285000* 40285005  40285010
       *40285020**40285135**40285160* 40285600  40287000  40290200  40292212  40293010 *40311100**40317800**40321100*
        40322440 *40322442**40322800**40324102**40327000* 40356800
DDD  --  REAL ARRAY  --  DECLARED AT 41600400
       *41602900**41603700**41603800**41603900**41604000**41604100**41604200**41604300**41604400**41604500**41604600*
       *41604700**41604800**41604900**41605000**41605100**41605200**41605300**41605400**41605500**41605600**41605800*
       *41605900**41606000* 41606200  41607300
DDD  --  REAL ARRAY  --  DECLARED AT 44017000
       *44202500*
DDD  --  REAL ARRAY  --  DECLARED AT 44207150
        44209200  44209300  44209400  44209500  44213500  44214000  44214100  44216900  44216910  44216940  44216950
        44240500  44242000  44243250  44243750  44245000 *44245500* 44250500  44253000  44255500 *44256200* 44256500
        44262000  44265000
DDD  --  REAL ARRAY  --  DECLARED AT 45002700
        45092220  45092230  45092240  45092250  45092260 *45092270**45092310**45092320**45092330*
DECK  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09718000
        09707000
DECKREMOVER  --  PROCEDURE  --  DECLARED AT 07354000
        16539000
DECLARECCVARIABLES  --  DEFINE  --  DECLARED AT 20288000
        20566100  20581000  20584000  20586800  20589800  20591000  20595000  20596800  20600010  20701500
DECWORD  --  REAL SUBROUTINE  --  DECLARED AT 05952705
```

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        05952735  05952740  05956750  05957350  05977600
DELAYOK  --  REAL SUBROUTINE  --  DECLARED AT 18503000
        18503300  18559500
DELINK  --  SUBROUTINE  --  DECLARED AT 20020500
        20022500  20046600
DELINK  --  SUBROUTINE  --  DECLARED AT 20088400
        20090400  20130000
DELINKIT  --  LABEL  --  DECLARED AT 02058000  --  OCCURS AT 02097400
        02082000
DELINKIT  --  SUBROUTINE  --  DECLARED AT 14351300
        14358395  14358397
DELTA  --  DEFINE  --  DECLARED AT 00067080
        24035500  24038800
DEND  --  DEFINE  --  DECLARED AT 05780200
        05845500  05850300  05850400  05850500  05850600  05851700  05851800  05962000  05962200  05962400  05962600
        05962800  06087200  06087300  06089300  06097100  06097200  06097300  06099500  06100100  06110900  06111000
        06111800  40322440  40324102
DESC  --  REAL  --  DECLARED AT 22231000
       *22267000*  22269000  22270000  22270050  22270100  22270200  22272000  22277000  22279000 *22286060*  22286075
        22286080  22286090  22286110  22286120 *22327200*  22327600  22328000  22328400  22329000
DESC  --  REAL ARRAY  --  DECLARED AT 42484000
       *42490000*  42493000  42497000  42498000  42500000  42501050  42501200  42501300  42501400  42501650  42501900
DEST  --  STREAM VARIABLE  --  DECLARED AT 07003640
       *07003760*  07003880
DESTIN  --  REAL  --  DECLARED AT 28002200
        28070200  28070600  28070800  28071000  28072800  28073200  28097800
DESTIN  --  REAL  --  DECLARED AT 28202600
        28254200  28270814  28280800  28281000  28304600
DESTIN  --  REAL  --  DECLARED AT 28401000
        28436400  28444100  28444200 *28454600**28456000*
DETACHINT  --  SUBROUTINE  --  DECLARED AT 19901900
        19902500  19902800  19903400
DETACHL  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19903400
        19901700
DETAILRECORDENTRY  --  SUBROUTINE  --  DECLARED AT 04277800
        04282200  04296000  04305600  04315000  04334400
DETAILRECORDENTRY  --  SUBROUTINE  --  DECLARED AT 04365000
        04370200  04377000  04382000  04387000  04393400  04395800  04405400  04416600  04421400
DEVIATION  --  REAL  --  DECLARED AT 12352500
       *12444000*  12444500
DEX  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20386000
        20384000  20401000 *20406000*  20410000 *20491000*
DIDGETESPDISK  --  REAL  --  DECLARED AT 20566330
        20566340 *20566687**20569410*  20572210 *20576125*
DIE  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22124000
        22134000
DIFFCOM  --  LABEL  --  DECLARED AT 00089200  --  OCCURS AT 48144000
        02329000  19526100  19526200  19542000  19553000  19566000  19578000  19580000  19586000  19588000  19682000
        19685560  19685595  19685596
DIMENSIONS  --  FIELD  --  DECLARED AT 00061050
        42501900
DIR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 01250200
        01250100  01250200  01258400
DIR  --  REAL ARRAY  --  DECLARED AT 06069300
        06092100  06092500  06092700  06093000  06093100  06093200  06093300  06093400  06093700 *06107200*
DIR  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09715000
        09704000
```

```
DIRADDR  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 28411200
        28411600
DIRDSK  --  REAL  --  DECLARED AT 00400500
        04105510  38078000  44240500
DIREC  --  DEFINE  --  DECLARED AT 15071000
        15080000
DIREC  --  INTEGER  --  DECLARED AT 38004000
        38036000  38064600  38075500  38097000
DIREC  --  INTEGER  --  DECLARED AT 38102400
        38106600 *38122500* 38125000  38130000  38137000  38141500  38142000 *38145000**38149000*
DIREC  --  INTEGER  --  DECLARED AT 38200400
        38204600 *38241000**38242500**38245500**38261000*
DIREC  --  INTEGER  --  DECLARED AT 39003000
        39027000  39032000  39035000  39036000  39037000  39038000  39039000 *39089000**39237000**39241000**39293200*
        39303000
DIRECT  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20314300
        20314050  20362000  20363000  20364000  20365000
DIRECT  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20386100
        20384100  20397300
DIRECT  --  REAL ARRAY  --  DECLARED AT 20566100
        20566902
DIRECT  --  REAL ARRAY  --  DECLARED AT 20581000
DIRECT  --  REAL ARRAY  --  DECLARED AT 20584000
        20584200
DIRECT  --  REAL ARRAY  --  DECLARED AT 20586800
        20587100
DIRECT  --  REAL ARRAY  --  DECLARED AT 20589800
        20590000
DIRECT  --  REAL ARRAY  --  DECLARED AT 20591000
        20591400
DIRECT  --  REAL ARRAY  --  DECLARED AT 20595000
        20596300
DIRECT  --  REAL ARRAY  --  DECLARED AT 20596800
DIRECT  --  REAL ARRAY  --  DECLARED AT 20600010
        20600040 *20601660**20601720* 20604900  20605100
DIRECT  --  REAL ARRAY  --  DECLARED AT 20701500
        20706000
DIRECTORYBUILDER  --  PROCEDURE  --  DECLARED AT 40000000
        44242000  44242010  44242020
DIRECTORYMASK  --  DEFINE  --  DECLARED AT 00081976
        06103500  06116000  06463992  07562000  07568000  08259575  08268000  08270650  14560000  14569000  14588100
        14618000  18023000  18033000  18273000  18425200  18425400  18466000  20760000  20769200  20771020  40336000
DIRECTORYSEARC  --  REAL  --  DECLARED AT 00430225
        05976800  16816500  20578425  20593950  20594650  28283600
DIRECTORYSEARCH  --  REAL PROCEDURE  --  DECLARED AT 18155000  --  FORWARD AT 00428000
        00430225  05953800  05975750  05977900  06353530  06463200  06463970  07256000  07303000  07333000  07410100
        07417500  07419100  08259225  08273750  08296600  08296800  08568700  08570880  09633000  09634100  09642000
        09680800  09681545  09681650  12562000  12590000  12630000  12632000  14372000  14585300  16807500  16809000
        16810000  16815500 *18467000*  18525700  18526800  18553400  19575000  19698000  19799000  20045600  20289146
        20289340  20511306  20511350  20511620  20574850  20574910  20575650  20576216  20576300  20577675  20577815
        20577826  20578200  20578400  20585360  20587200  20588250  20589000  20591950  20592300  20606865  20731000
        20765000  22069030  28011830  28013400  28013600  28087400  28093600  28099000  28265200  28266400  28270816
        28281600  28287000  28296400  28307725  28415400  28417000  28419000  28419600  28446300  28881000  28889000
        37292800  38014900  38509000  38515000  38518500  38608200  40353200  41317800  41320400  41602200  44243750
        44245000  44250500  45092110  45093000
DIRECTORYTOG  --  DEFINE  --  DECLARED AT 00081974
        06103500  07562000  08268000  14560000  14588100  18033000  18273000  18425400
```

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DIRECTORYTOP  --  REAL  --  DECLARED AT 00418050
        05959000  05967000  06091600  07001820  07314200  07327000  07547100  07571000  08381000  08384000  08438410
        08438430  08571200  08571500  08597810  08597830  08630000  08673000  08832000  08834000  12321110  12321160
        14601000  15501300  18232000  18233000  18234000  28466800  39960000  39968000  40275300  41320330  41320350
       *44083100* 44086100  44202700  44202900  44209100  44213000  45137000
DIRMOD  --  DEFINE  --  DECLARED AT 00419150
        40262500  40317200
DIRSRH  --  REAL SUBROUTINE  --  DECLARED AT 06463000
        06463810  06463820  06463860
DIRTOPAREAV  --  DEFINE  --  DECLARED AT 00017350
DISC  --  REAL  --  DECLARED AT 04258800
        04280000  04283200 *04284200* 04286600  04305400  04315400  04316800
DISC  --  REAL  --  DECLARED AT 04356200
DISC  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22215000
        22065000
DISCONDC  --  DEFINE  --  DECLARED AT 00414100
DISK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019300
        00019100  00019200
DISK  --  LABEL  --  DECLARED AT 04357800  --  OCCURS AT 04411600
        04358400
DISK  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 06003000
        06000000  06001000 *06004100* 06005000  06013000  06016100
DISK  --  STREAM VARIABLE  --  DECLARED AT 06013000
        06014000
DISK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06063000
        06061500  06062000  06065000
DISK  --  LABEL  --  DECLARED AT 07244100  --  OCCURS AT 07265500
        07256000  07258400
DISK  --  LABEL  --  DECLARED AT 08255700  --  OCCURS AT 08276590
        08270700  08273750  08276150
DISK  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09711000
        09703000
DISK  --  DEFINE  --  DECLARED AT 20242000
        20461700  20474000  20567265  20570430  38539000  40078093
DISK  --  LABEL  --  DECLARED AT 22061200  --  OCCURS AT 22069560
        22069030  22069150
DISK  --  REAL  --  DECLARED AT 22231000
       *22323000**22325200* 22325400  22331400 *22333800* 22335200  22336000
DISK  --  REAL  --  DECLARED AT 41600300
       *41602100* 41602200  41607200
DISKAD  --  REAL  --  DECLARED AT 07408100
       *07418100* 07418200  07418900
DISKADDR  --  REAL  --  DECLARED AT 09501000
       *09505500* 09506500  09508500 *09509000* 09509500  09510000
DISKADDR  --  REAL  --  DECLARED AT 09602100
DISKADDR  --  INTEGER  --  DECLARED AT 14159000
       *14186148**14198700**14202000**14203000* 14206000  14212000
DISKADDRESS  --  REAL PROCEDURE  --  DECLARED AT 37286000  --  FORWARD AT 00390000
       *37298000* 37299000  38075000  38401000  38411500  38453000  38461000
DISKAV  --  INTEGER  --  DECLARED AT 06069200
       *06109500* 06110300  06114300
DISKAVAILTABLEMAX  --  DEFINE  --  DECLARED AT 00165820
        05849000  44086200
DISKBOTTOM  --  REAL  --  DECLARED AT 00418100
        08268900  14562000  18225000  20382120  40016910  40290000  40293020  40293030  40322150  40322430 *44240580*
DISKCELL  --  REAL  --  DECLARED AT 04259800
DISKCHAIN  --  REAL  --  DECLARED AT 07008200
```

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        07026300  07026400 *07026500* 07179200 *07179230* 07179250 *07179320*
DISKCLOSE  --  PROCEDURE  --  DECLARED AT 38355000
        41215000
DISKERR  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04151300
DISKFILEOPEN  --  PROCEDURE  --  DECLARED AT 38000000
        38101000  39257000
DISKHEADERAREAV  --  DEFINE  --  DECLARED AT 00017270
        07097000  18286000  20028300  28070000  28288000
DISKIO  --  PROCEDURE  --  DECLARED AT 06000000  --  FORWARD AT 00432000
        06020000  06065000  06098400  06214000  06254000  06464800  07145000  07148000  07167000  07176000  07402000
        07444000  07445200  07445300  08384000  08630000  08865000  08915000  08933000  08935000  08939000  08942000
        08946000  13049000  14206000  14292000  14381000  14383800  14388000  14392000  14398700  14399300  19738000
        20404000  20588400  22029000  22331400  28237200  38247500  38284000  40278000  40317210
DISKMESSAGE  --  SUBROUTINE  --  DECLARED AT 04271400
        04277400  04295800  04305400  04314820  04334200
DISKMSG  --  DEFINE  --  DECLARED AT 00416570
        41333090
DISKORAUXERROR  --  PROCEDURE  --  DECLARED AT 04256000  --  FORWARD AT 04121410
        04224010  04353000
DISKREAD  --  REAL  --  DECLARED AT 00029000
       *00040000* 00044000
DISKRTN  --  PROCEDURE  --  DECLARED AT 24200000  --  FORWARD AT 00363000
        14360370  18845300  24227000  42479000  42535500
DISKRUNNING  --  DEFINE  --  DECLARED AT 40008190
        40027250  40078092  40321400
DISKSETUP  --  SUBROUTINE  --  DECLARED AT 38011000
        38046000  38049000
DISKSPACE  --  INTEGER PROCEDURE  --  DECLARED AT 24101000  --  FORWARD AT 00365000
        22325200  22333800 *24144000**24156000* 24169000
DISKSPACE  --  LABEL  --  DECLARED AT 14627300  --  OCCURS AT 14659000
        14631000
DISKSQUASH  --  PROCEDURE  --  DECLARED AT 06068000
        06102900  16610300  16610400  16610600
DISKTOP  --  REAL  --  DECLARED AT 40005100
DISKTYPE  --  DEFINE  --  DECLARED AT 20584300
        20584650
DISKWAIT  --  PROCEDURE  --  DECLARED AT 06061500  --  FORWARD AT 00019100
        02173210  02173286  02173350  02219000  04710000  04722000  04731000  05704000  05722000  05724000  05728000
        05728180  05844930  05846360  05850120  05853425  05961400  05967200  05975600  05977000  05977550  06086400
        06089900  06091800  06097000  06110300  06114300  06380400  06380900  06463880  06463988  07001820  07026400
        07179250  07257600  07264000  07276000  07282000  07314200  07317000  07322000  07327000  07330200  07330400
        07371800  07418200  07418900  07435000  07438200  07547100  07559110  07564000  07566000  07571000  08105400
        08112050  08259450  08268950  08269300  08270000  08275750  08276500  08381000  08438410  08438430  08569900
        08569910  08570800  08571200  08571500  08597810  08597830  08604100  08631100  08673000  08690020  08712110
        08712140  08715200  08716300  08832000  08834000  09505500  09506500  09508600  09640000  09646000  09680300
        09682610  12321110  12321160  14411660  14556000  14563000  14592000  14598100  14600500  14602000  14603400
        14607000  14609000  15501300  15531100  15548000  15549000  16041110  16827900  17003000  18015000  18018000
        18022000  18047500  18049000  18071000  18075500  18226000  18229000  18240000  18245500  18247500  18248500
        18273040  18276000  18461000  18740900  19685065  19707000  19711300  19720000  19750000  19751000  19754000
        19766300  19768750  19779000  19781000  19785000  20022000  20022200  20027300  20028900  20030700  20034500
        20035700  20035900  20046200  20050000  20059300  20089900  20090100  20121800  20125000  20176054  20289255
        20289325  20289360  20289365  20289510  20382140  20511610  20566690  20566820  20566830  20566840  20567330
        20567335  20567345  20567350  20572500  20576210  20576768  20581800  20582000  20582350  20583250  20583350
        20583600  20601740  20603250  20704250  20758000  22069110  22069440  22907000  22918000  28012140  28254000
        28301600  28409800  28437000  28437800  28452400  28453400  28454200  28467000  28812000  28823000  28882400
        28887000  30917000  32000500  38437000  38439000  38443000  38452000  38458000  38466000  38471000  38476000
        38496000  38608000  39960000  39968000  40008330  40275300  40293110  40311300  40317400  40317600  40322600
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        40324500  40332000  40334057  40353140  41318370  41318740  41318820  41318860  41318940  41319200  41319320
        41320220  41320260  41320330  41320350  41321450  41321500  41321650  41322450  41328900  41330500  41332400
        41333600  41334300  41502300  41602600  41607300  44037300  44202600  44202700  44202900  44209100  44213000
        44243000  44246000  44254000  44256300  44261500  44266500  44271500  45092190  45092210  45092250  45092280
        45092340  45094200  45137000
DISPLAY  --  PROCEDURE  --  DECLARED AT 15019000
        18530100  18540100
DIVIDEBYZERO  --  LABEL  --  DECLARED AT 42511000  --  OCCURS AT 42550000
        42512000
DK  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04167900
        04128000
DK  --  LABEL  --  DECLARED AT 07008200  --  OCCURS AT 07119100
        07118690
DK  --  STREAM LABEL  --  DECLARED AT 08299400  --  OCCURS AT 08299800
DK  --  STREAM VARIABLE  --  DECLARED AT 08478900
        08479300
DK  --  STREAM VARIABLE  --  DECLARED AT 37241030
        37241050
DK  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38818000
        38662000
DK  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41215000
        41006000
DKADR  --  REAL  --  DECLARED AT 06462100
       *06464200*  06464600  06464700  06464800 *06466100*
DKBUSINESS  --  PROCEDURE  --  DECLARED AT 05950000
        16805000  19685460
DKPN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39252000
        39092050
DKPO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39252000
DKRN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39247000
        39008000
DKRO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39247000
        39050000
DKSGROW  --  REAL  --  DECLARED AT 06462100
        06462105 *06463996*  06464600
DKSN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39256000
        39008000
DKSO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39256000
        39050000
DKUN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39250000
        39008000
DKUO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39249000
        39050000
DK1  --  LABEL  --  DECLARED AT 39055000  --  OCCURS AT 39257000
        39248000  39251000
DLNK  --  REAL ARRAY  --  DECLARED AT 08854000
       *08930000*  08933000 *08934000*  08935000  08939000 *08941000*  08942000  08947000
DLOOP  --  LABEL  --  DECLARED AT 14166200  --  OCCURS AT 14278100
        14279600
DLX  --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20022300
        20021700
DLX  --  LABEL  --  DECLARED AT 20085800  --  OCCURS AT 20090200
        20089600
DMP  --  LABEL  --  DECLARED AT 09701500  --  OCCURS AT 09720500
        09704500
DNE  --  LABEL  --  DECLARED AT 38663000  --  OCCURS AT 38711000
        38721000
```

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DNE -- LABEL -- DECLARED AT 41007000
DOCREATOR -- SUBROUTINE -- DECLARED AT 08111500
        08113050  08114500
DODATFORLAST -- SUBROUTINE -- DECLARED AT 08107750
        08108850  08114310  08114360
DOIONOW -- SUBROUTINE -- DECLARED AT 04556000
        04568250  04568350  04568440  04568510  04579000  04579200  04587000  04588050  04588070  04588110  04588150
        04588560  04594000  04598000  04601000  04631000  04636000  04638700  04657300  04658300
DOIONOW -- SUBROUTINE -- DECLARED AT 04671100
        04673550  04675950  04676050  04676200  04676350  04676550  04676900  04678800  04679650  04679800  04680000
        04683150  04684150  04684400
DOIT -- LABEL -- DECLARED AT 02189000 -- OCCURS AT 02275300
        02276500
DOIT -- SUBROUTINE -- DECLARED AT 08443000
        08485000  08499000
DOIT -- SUBROUTINE -- DECLARED AT 39930000
        39942000  39963000  39969000
DOITOVER -- LABEL -- DECLARED AT 37007000
DOLITTLE -- PROCEDURE -- DECLARED AT 36001000
        36010000  37047000  37048000  37085000  37100000  37113000  38014600
DOLP -- LABEL -- DECLARED AT 02058000 -- OCCURS AT 02075000
        02107000
DONE -- LABEL -- DECLARED AT 19901600 -- OCCURS AT 19904300
        19903970
DONE -- LABEL -- DECLARED AT 37505000 -- OCCURS AT 37530100
        37523000  37524000
DONTWAIT -- LABEL -- DECLARED AT 18208000 -- OCCURS AT 18260500
        18254000
DOOPTIONS -- SUBROUTINE -- DECLARED AT 08113900
        08115000  08115400
DORECS -- SUBROUTINE -- DECLARED AT 08106950
        08107650  08114250
DOSAVEFACTOR -- SUBROUTINE -- DECLARED AT 08113150
        08113800  08114550
DOSECURITY -- SUBROUTINE -- DECLARED AT 08109900
        08111400  08114450
DOSIZE -- SUBROUTINE -- DECLARED AT 08108950
        08109800  08114400
DOUBLEPRECISION -- REAL SUBROUTINE -- DECLARED AT 42517010
        42517050  42546000  42551300
DOWN -- LABEL -- DECLARED AT 14548000 -- OCCURS AT 14558500
        14553000
DOWN -- LABEL -- DECLARED AT 20392000 -- OCCURS AT 20510000
        20480000  20507100
DOWN -- LABEL -- DECLARED AT 20597850 -- OCCURS AT 20606610
        20603900  20606050  20606100  20606350  20606800  20609500
DOWNR -- LABEL -- DECLARED AT 20566610 -- OCCURS AT 20575900
        20574925
DP -- LABEL -- DECLARED AT 16054000 -- OCCURS AT 16137000
        16063000
DRAINO -- PROCEDURE -- DECLARED AT 02347200
        02347460  06328300
DRM -- STREAM LABEL -- DECLARED AT 41333033 -- OCCURS AT 41333039
DROPOUT -- LABEL -- DECLARED AT 08100350 -- OCCURS AT 08103600
        08103350
DRUM -- LABEL -- DECLARED AT 04357800 -- OCCURS AT 04411400
        04358400
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DRUM  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22214000
        22065000
DRUM  --  INTEGER  --  DECLARED AT 24206000
DS  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04155000
        04171000
DS  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16111000
        16062000
DS  --  DEFINE  --  DECLARED AT 36004000
        36007000  36008000
DSD  --  LABEL  --  DECLARED AT 14548000  --  OCCURS AT 14583100
        14559500  14585400
DSED  --  DEFINE  --  DECLARED AT 04670750
        04684550  04686000  04687350
DSED  --  DEFINE  --  DECLARED AT 12515500
        12545000  12649000  12699500  12705250  12710000  12710500
DSED  --  DEFINE  --  DECLARED AT 12814500
        12861500  12878000  12880500  12900000  12901000
DSED  --  DEFINE  --  DECLARED AT 13020000
        13108000
DSED  --  DEFINE  --  DECLARED AT 18007000
        18029000  18034000
DSED  --  DEFINE  --  DECLARED AT 18201000
DSED  --  DEFINE  --  DECLARED AT 19900280
        19900670
DSED  --  DEFINE  --  DECLARED AT 28007200
        28022200  28036200  28041600  28043000  28046400  28061800  28085800  28086200  28089600  28095600  28096800
        28097200
DSED  --  DEFINE  --  DECLARED AT 28206600
        28216800  28225200  28230400  28232800  28242000  28242200  28258700  28270824  28285400  28293800  28295800
        28303200  28303600  28307730
DSED  --  DEFINE  --  DECLARED AT 28406600
        28467400  28472800  28476200
DSED  --  DEFINE  --  DECLARED AT 28807000
        28848000  28849000  28852100  28852200  28863000  28882000
DSED  --  DEFINE  --  DECLARED AT 37006000
        37046800  37046810  37047250  37048100  37121000  37172000
DSED  --  REAL SUBROUTINE  --  DECLARED AT 37181000
        37185330  37186750  37218000  37227000  37241400
DSED  --  REAL SUBROUTINE  --  DECLARED AT 39009050
DSIT  --  LABEL  --  DECLARED AT 04261200  --  OCCURS AT 04300600
        04303000
DSIZE  --  DEFINE  --  DECLARED AT 05780100
        05845000  05845300  05850600  05851700  05962600  05962800  05974400  05974800  06074000  06088200  06093800
        06101700  06108800  40322442
DSIZE  --  DEFINE  --  DECLARED AT 20318000
DSK  --  STREAM VARIABLE  --  DECLARED AT 41333010
        41333033
DSKADR  --  STREAM VARIABLE  --  DECLARED AT 28831000
        28831500
DSKADRS  --  REAL  --  DECLARED AT 04260400
        04271800  04281400  04285000 *04285800*  04325800
DSKCHECK  --  LABEL  --  DECLARED AT 20391000  --  OCCURS AT 20484000
        20457000  20481900  20482000  20483000  20484050  20484550  20484800  20484870
DSKTOG  --  DEFINE  --  DECLARED AT 00416500
        04105510  38078000
DSM  --  LABEL  --  DECLARED AT 16053000  --  OCCURS AT 16123000
        16118300  16206200
```

```
DSZE -- STREAM VARIABLE -- DECLARED AT 02222200
        02251100
DT -- REAL -- VALUE PARAMETER -- DECLARED AT 08070000
        08317000  08319700  08320000  08339500
DT -- LABEL -- DECLARED AT 16355000 -- OCCURS AT 16490000
        16364000
DT -- REAL -- DECLARED AT 20012200
DT -- REAL -- DECLARED AT 20081400
        20105350  20105400
DT -- REAL -- DECLARED AT 20141800
        20172100
DTOG -- STREAM VARIABLE -- DECLARED AT 20105400
        20106900
DUMMY -- LABEL -- DECLARED AT 08100350 -- OCCURS AT 08103200
DUMMY -- LABEL -- DECLARED AT 38364000 -- OCCURS AT 38485000
DUMP -- DEFINE -- DECLARED AT 20222000
DUMPADR -- DEFINE -- DECLARED AT 00644300
        00656600
DUMPCORE -- PROCEDURE -- DECLARED AT 02434100 -- FORWARD AT 00480100
        02434880  16154000  18870700
DUMPCRD -- DEFINE -- DECLARED AT 00644200
        00657000
DUMPDIR -- DEFINE -- DECLARED AT 28009800
        28084400
DUMPDIR -- DEFINE -- DECLARED AT 28210600
        28266600  28268800
DUMPNOW -- DEFINE -- DECLARED AT 00012160
        18870700
DUN -- STREAM LABEL -- DECLARED AT 20600425 -- OCCURS AT 20600455
DUN -- LABEL -- DECLARED AT 37180650 -- OCCURS AT 37195500
        37195400
DV -- STREAM VARIABLE -- DECLARED AT 06195125
       *06195150**06195160**06195162**06195170*
DV -- STREAM VARIABLE -- DECLARED AT 12310000
       *12312500**12313500**12315000**12316000**12317000*
DV -- STREAM VARIABLE -- DECLARED AT 12467500
       *12470000*
DW -- STREAM VARIABLE -- DECLARED AT 08333000
DX -- LABEL -- DECLARED AT 04125000 -- OCCURS AT 04176900
        04152600
DX1 -- LABEL -- DECLARED AT 04125000 -- OCCURS AT 04176900
DY -- REAL -- DECLARED AT 08344000
       *08360000* 08363000 *08366000**08369000* 08370000
DZ -- LABEL -- DECLARED AT 05847800 -- OCCURS AT 05853600
        05849460
D17 -- LABEL -- DECLARED AT 04357200 -- OCCURS AT 04385800
        04389400
D19 -- LABEL -- DECLARED AT 04357200 -- OCCURS AT 04389400
        04390200  04394400  04400400  04406400  04408000  04413200  04418000
D22 -- LABEL -- DECLARED AT 04357200 -- OCCURS AT 04388200
        04418600  04423800
E -- REAL -- VALUE PARAMETER -- DECLARED AT 00454200
        00454000  00454100
E -- REAL -- NAME PARAMETER -- DECLARED AT 02052800
        02052700
E -- STREAM VARIABLE -- DECLARED AT 02347350
        02347390 *02347400*
```

```
E  --  REAL  --  DECLARED AT 04126000
        04127000 *04130000**04132000* 04135000  04160000  04196200  04222000
E  --  REAL  --  DECLARED AT 04257200
       *04304800* 04310400  04311200  04311800  04314000  04317800 *04318400* 04319000 *04319600* 04325400  04332600
       *04333800**04335400**04336600**04337400*
E  --  REAL  --  DECLARED AT 04353800
       *04373200* 04374200  04379600  04380000  04386000  04387800 *04389400* 04390000  04390800  04392200  04393200
        04395000  04396800 *04403000* 04404000  04405200  04408800  04410400  04412600  04414400  04418600  04422600
        04422800  04424000 *04425200* 04429400  04430000  04430600
E  --  REAL  --  DECLARED AT 04704000
       *04732000* 04733000
E  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05844920
        05842500  05843800
E  --  REAL  --  DECLARED AT 05847700
       *05849500* 05850110  05851600 *05852700*
E  --  REAL  --  DECLARED AT 05952200
        05952260  05952270 *05961000* 05961200 *05967600* 05967800  05968000  05969000  05971400
E  --  REAL  --  DECLARED AT 06068300
       *06092100* 06092300  06093000 *06098300* 06098400  06098500  06098700 *06108300* 06108800  06109200  06109300
E  --  REAL  --  DECLARED AT 06351000
       *06380100**06380140* 06380150  06380300  06380550 *06380650**06380700*
E  --  STREAM LABEL  --  DECLARED AT 07360200  --  OCCURS AT 07368000
E  --  REAL  --  DECLARED AT 08099550
        08104900  08106040  08106350  08111850
E  --  STREAM VARIABLE  --  DECLARED AT 08106350
E  --  STREAM LABEL  --  DECLARED AT 14421000  --  OCCURS AT 14428000
        15416000
E  --  STREAM VARIABLE  --  DECLARED AT 16828200  --  OCCURS AT 15412000
E  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
        17000000  17000200  17003250
E  --  STREAM VARIABLE  --  DECLARED AT 17003250
        17004250
E  --  REAL  --  DECLARED AT 20294000
       *20294800* 20296200  20299000
E  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20382015
        20382010 *20382660*
E  --  STREAM VARIABLE  --  DECLARED AT 20600170
        20600180
E  --  LABEL  --  DECLARED AT 36003000  --  OCCURS AT 36009000
        36005000  36008000
E  --  DEFINE  --  DECLARED AT 37501000
        37510000  37511000
E  --  STREAM VARIABLE  --  DECLARED AT 38711000
        38714000
E  --  STREAM VARIABLE  --  DECLARED AT 38807000
        38810000 *38810500*
E  --  STREAM VARIABLE  --  DECLARED AT 41500900
        41501100
EA  --  REAL  --  DECLARED AT 28401000
       *28435600* 28438000 *28458800* 28461800  28463800
EAIN  --  REAL  --  DECLARED AT 28002600
EAIN  --  REAL  --  DECLARED AT 28401200
       *28432400* 28432800  28433200  28441600 *28459400**28461800**28463800*
EB  --  STREAM VARIABLE  --  DECLARED AT 07032100
        07036280
EBCDIC  --  REAL  --  DECLARED AT 07009200
        07031200 *07031400**07039600* 07059010  07060100  07066100
```

```
EBCDICCONVERT -- STREAM PROCEDURE -- DECLARED AT 07003610
        07060100
EBTABLE -- PROCEDURE -- DECLARED AT 07003270
        07003420  07003430  07031500
EBTABLEADR -- REAL -- DECLARED AT 07009200
       *07039700* 07060200
ECH -- LABEL -- DECLARED AT 15403000 -- OCCURS AT 15439000
        15418500  15419000  15421000  15422000  15425000  15438020
ED -- LABEL -- DECLARED AT 16356000 -- OCCURS AT 16541000
        16365000
EGGSELECTSTOPPED -- DEFINE -- DECLARED AT 00081600
EH -- INTEGER -- DECLARED AT 08852500
       *08886300**08886600* 08887100
EH -- STREAM VARIABLE -- DECLARED AT 08887100
        08891000
EI -- LABEL -- DECLARED AT 16700500 -- OCCURS AT 16866400
        16705000
EL -- LABEL -- DECLARED AT 22062000 -- OCCURS AT 22086000
        22126000
EM -- INTEGER -- DECLARED AT 08852500
       *08886600* 08887100
EM -- STREAM VARIABLE -- DECLARED AT 08887100
EMASK -- DEFINE -- DECLARED AT 19901850
        19902130  19902850  19903650
EMPTY -- SUBROUTINE -- DECLARED AT 38680000
        38735000  38740000  38746000  38758000  38795000
EN -- STREAM LABEL -- DECLARED AT 07363000 -- OCCURS AT 07365500
        07364000
ENDAIT -- REAL -- DECLARED AT 14351205
       *14358335* 14358340
ENDECK -- LABEL -- DECLARED AT 20597800 -- OCCURS AT 20608110
        20599000  20607750
ENDF -- LABEL -- DECLARED AT 20597800 -- OCCURS AT 20608450
        20598000
ENDFI -- DEFINE -- DECLARED AT 20226000
        20374300  20596950  20608300  20608740
ENDIT -- LABEL -- DECLARED AT 04555000 -- OCCURS AT 04651010
        04648300
ENDMVE -- LABEL -- DECLARED AT 06070000 -- OCCURS AT 06102100
        06099500  06101800
ENDOFDECK -- PROCEDURE -- DECLARED AT 07406000 -- FORWARD AT 02177100
        02347450  07372500  07479100  20608870
ENDOFREEL -- REAL SUBROUTINE -- DECLARED AT 28032800
        28039800  28040000  28043600  28063400  28076600
ENDOFREEL -- REAL SUBROUTINE -- DECLARED AT 28222000
        28228800  28229000  28231000  28303800
ENTE -- LABEL -- DECLARED AT 20566600 -- OCCURS AT 20569230
        20566620
ENTF -- LABEL -- DECLARED AT 20597750 -- OCCURS AT 20606400
        20597950
ENTERCONTROLDECK -- PROCEDURE -- DECLARED AT 07541000 -- FORWARD AT 07002100
        07180000  07575000  18526700  18527400
ENTERFILE -- SUBROUTINE -- DECLARED AT 05953060
        05953225  05975630  05977150  05977650
ENTERSYSFILE -- PROCEDURE -- DECLARED AT 41600000 -- FORWARD AT 00464000
        07265200  08276560  20587340  22069530  41607700  45099900  45099910  45099920
ENTERUSERFILE -- DEFINE -- DECLARED AT 02378000
```

```
        05953130  08572600  14622000  20289530  28299400  38499000  41318360  41321600  41607200
EOD  --  LABEL  --  DECLARED AT 38664000  --  OCCURS AT 38804000
        38812000
EOD  --  LABEL  --  DECLARED AT 41007100
EOF  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04419000
        04408600
EOF  --  LABEL  --  DECLARED AT 12513000  --  OCCURS AT 12726000
        12714500  12717000  12718500
EOF  --  LABEL  --  DECLARED AT 14627200  --  OCCURS AT 14637000
        14631000
EOF  --  LABEL  --  DECLARED AT 37287000  --  OCCURS AT 37297000
        37290100  37291200
EOF  --  REAL  --  DECLARED AT 37451000
       *37457000* 37458000
EOF  --  LABEL  --  DECLARED AT 38363000  --  OCCURS AT 38376000
        38374000
EOF  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38559000
        38557000
EOF  --  LABEL  --  DECLARED AT 38663000  --  OCCURS AT 38672000
        38670000
EOF  --  LABEL  --  DECLARED AT 41007000
EOFIT  --  LABEL  --  DECLARED AT 38693000  --  OCCURS AT 38759000
        38773100
EOFIT  --  LABEL  --  DECLARED AT 41036000
EOFPOINTER  --  DEFINE  --  DECLARED AT 08101150
        08107100
EOF2  --  LABEL  --  DECLARED AT 37287000  --  OCCURS AT 37297500
        37292000
EOJBIT  --  DEFINE  --  DECLARED AT 00417020
EOJMESS  --  DEFINE  --  DECLARED AT 00406000
        14430400
EOS  --  STREAM VARIABLE  --  DECLARED AT 20600390
       *20600450*
EOT  --  LABEL  --  DECLARED AT 14627200  --  OCCURS AT 14640000
        14631000
EOT  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38623000
        38581600
EQLTOG  --  STREAM VARIABLE  --  DECLARED AT 12225500
       *12230500* 12232500 *12240000*
EQN  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20386100
        20384000 *20403000* 20404000  20405000 *20410000**20410100* 20411000 *20417000**20418000**20421000* 20427000
        20433000 *20435500* 20439000 *20453000**20465100**20478505**20478550**20484500**20484750**20484865**20490000*
EQUAL  --  DEFINE  --  DECLARED AT 20214000
        20380000  20416000  20484200  20495000  20567045  20567080  20569930  20569960  20570130  20570190  20573400
        20573430  20577000  20590100  20593150  20593200  20605700  20716000  20719000
EQUATING  --  DEFINE  --  DECLARED AT 20019300
        20048100
EQUATING  --  DEFINE  --  DECLARED AT 20088200
EQUATING  --  DEFINE  --  DECLARED AT 20148400
        20187600
ER  --  STREAM VARIABLE  --  DECLARED AT 20511370
        20511400
ERASEIOD  --  REAL  --  DECLARED AT 04554000
       *04606000* 04628000  04632000
ERR  --  LABEL  --  DECLARED AT 02434135  --  OCCURS AT 02434760
        02434178
ERR  --  STREAM LABEL  --  DECLARED AT 06082200  --  OCCURS AT 06083900
```

```
        06082500  06083300
ERR  --  LABEL  --  DECLARED AT 07355100  --  OCCURS AT 07374100
        07372700
ERR  --  STREAM LABEL  --  DECLARED AT 16824600  --  OCCURS AT 16825100
ERR  --  REAL  --  DECLARED AT 19694000
       *19697400**19700000* 19791000  19792000  19796000  19797000  19799050  19799060
ERR  --  STREAM LABEL  --  DECLARED AT 20500200  --  OCCURS AT 20501100
ERR  --  LABEL  --  DECLARED AT 20511165  --  OCCURS AT 20511340
        20511313
ERROR  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01260500
        01255400  01256300  01259100
ERROR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02347210
        02347200  02347210  02347260  02347435  02347450
ERROR  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07214000
        07051170  07119300  07120020
ERROR  --  STREAM LABEL  --  DECLARED AT 08814000  --  OCCURS AT 08822000
        08816000  08817000
ERROR  --  DEFINE  --  DECLARED AT 09626000
        09633000  09634200
ERROR  --  LABEL  --  DECLARED AT 12214500  --  OCCURS AT 12292000
        12262000  12286500  12288500
ERROR  --  LABEL  --  DECLARED AT 16053000  --  OCCURS AT 16343600
        16061000  16083000  16100000  16110000  16119000  16129000  16149000  16150100  16163000  16163200  16202000
        16215000  16245000  16257000  16262000  16263200  16263350
ERROR  --  LABEL  --  DECLARED AT 16354000  --  OCCURS AT 16689200
        16362000  16489000  16504000  16576000  16588000  16610400  16610800
ERROR  --  LABEL  --  DECLARED AT 16699000  --  OCCURS AT 16902700
        16703000  16785000  16807000  16825400  16825600  16856300
ERROR  --  LABEL  --  DECLARED AT 16914000  --  OCCURS AT 16964500
        16934000  16948000  16948500  16955500  16958630
ERROR  --  LABEL  --  DECLARED AT 19695000  --  OCCURS AT 19787000
        19701000
ERROR  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20479000
        20396000  20396010  20409000  20416000  20416500  20422000  20426000  20432000  20438000  20461320  20461400
        20461900  20470110  20471000  20476000  20478510  20478540  20484200  20484250  20496000  20503000  20507400
ERROR  --  LABEL  --  DECLARED AT 20511165  --  OCCURS AT 20511366
        20511190  20511303
ERROR  --  LABEL  --  DECLARED AT 20589720  --  OCCURS AT 20590740
        20590100  20590250  20590655  20590675  20590695
ERROR  --  REAL  --  DECLARED AT 40005110
       *40027230**40057000**40060400**40064000**40068000* 40078091  40078092 *40292230*
ERRORFIXER  --  PROCEDURE  --  DECLARED AT 31000000  --  FORWARD AT 00019500
        18821900  31025000  42524100  42540000  42551000  48142200
ERRORMESSER  --  PROCEDURE  --  DECLARED AT 30903000
        30931000  31017220
ERRORMSG  --  DEFINE  --  DECLARED AT 00416050
        30930000
ERROROUT  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04686900
        04672150  04672750  04673200  04676100  04676250  04676650  04677000  04678500  04681050  04681350
ERROROUT  --  LABEL  --  DECLARED AT 15112700  --  OCCURS AT 15115600
        15113300
ERRORS  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04129900
ERRORTOG  --  REAL  --  DECLARED AT 12205000
       *12292500* 12307000
ERRORTOG  --  STREAM VARIABLE  --  DECLARED AT 12307000
        12311500
ERRRBIT  --  DEFINE  --  DECLARED AT 00417052
```

```
ERRTOG  --  STREAM VARIABLE  --  DECLARED AT 06077900
      *06083900*
ERRTOG  --  STREAM VARIABLE  --  DECLARED AT 16823100
      *16825100*
ERSYS  --  LABEL  --  DECLARED AT 20511152  --  OCCURS AT 20511190
       20511363
ERTOG  --  REAL  --  DECLARED AT 14346000
      *14358200* 14376000  14409000
ER1  --  REAL  --  DECLARED AT 20511152
      *20511175**20511190**20511303**20511313**20511335**20511364**20511365* 20511370
ER2  --  REAL  --  DECLARED AT 20511152
      *20511190**20511303**20511313**20511335**20511364**20511365*
ER3  --  REAL  --  DECLARED AT 20511152
      *20511313*
ES  --  INTEGER  --  DECLARED AT 08852500
      *08886600* 08887100
ES  --  STREAM VARIABLE  --  DECLARED AT 08887100
      *08892000* 08893000
ESAD  --  DEFINE  --  DECLARED AT 00005200
ESED  --  REAL  --  DECLARED AT 06185000
      *06207100* 06208000  06229100
ESLL  --  LABEL  --  DECLARED AT 08856000
ESPADD  --  REAL  --  DECLARED AT 40005100
      *40008330* 40353140  40353160 *40353170*
ESPBIT  --  PROCEDURE  --  DECLARED AT 00025900
       00028000  00056000  22402000  44242020  44281500
ESPCOUNT  --  REAL  --  DECLARED AT 00399000
       06022100  06022600 *06033000**06038200**44173300*
ESPDISKAREAV  --  DEFINE  --  DECLARED AT 00017568
       28455400  28855000
ESPDISKBOTTOM  --  REAL  --  DECLARED AT 00401000
       06032000  06037100  06037700 *44087000* 44087100  44151700  44173300
ESPDISKTOP  --  REAL  --  DECLARED AT 00401100
       06037200  22029000  22907000  22918000 *44087100* 44151700  44173300  44254000  44256300
ESPTAB  --  REAL  --  DECLARED AT 00399000
       06023000  06031000  06038000 *44173200*
EST  --  INTEGER  --  DECLARED AT 20142950
      *20163700* 20163800  20165300
ESTIO  --  REAL  --  DECLARED AT 19696100
      *19738120* 19776010
ESTPROC  --  REAL  --  DECLARED AT 19696100
      *19738110* 19776000
ET  --  INTEGER  --  DECLARED AT 08528000
      *08538500*
ET  --  DEFINE  --  DECLARED AT 08852500
       08886300  08886600
ETIMEINDX  --  DEFINE  --  DECLARED AT 12217000
       12250500  12274500
ETIMEINDX  --  DEFINE  --  DECLARED AT 12367500
       12418500  12464000
ETIP  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01261160
       01261200
ETRLNG  --  DEFINE  --  DECLARED AT 00305000
       04137180  04279400  04366600  06463540  18524000  18553000  20049800  20063500  20066600  28050800  28051600
       37276100  37277000  37278200  37280000  38039000  41314300
FU  --  STREAM VARIABLE  --  DECLARED AT 04325800
       04330000  04331600
```

```
EU  --  INTEGER  --  DECLARED AT 06069100
        06074000  06074100  06078000  06101200  06101700 *06107900* 06108000 *06108200* 06108300  06108400  06108800
        06114700
EU  --  STREAM VARIABLE  --  DECLARED AT 06078000
        06080000
EU  --  STREAM VARIABLE  --  DECLARED AT 16823100
        16824400
EU  --  DEFINE  --  DECLARED AT 20247600
        20484100  20567215
EUA  --  STREAM VARIABLE  --  DECLARED AT 04326000
        04330000  04331600
EUF  --  REAL PROCEDURE  --  DECLARED AT 14543000  --  FORWARD AT 02379000
        05953130  07559000  08572600  08714140 *14619000* 16815000  20289530  20578375  28299600  38227000  38499000
        41318370  41321600  41607200
EUIO  --  REAL ARRAY  --  DECLARED AT 00166000
       *04014002* 04194600  05842900 *22011500**44085100**44240880*
EUIOFFSET  --  DEFINE  --  DECLARED AT 05780310
        05842900  22011500  44240800
EUIOHOLDER  --  DEFINE  --  DECLARED AT 00165800
EULIT  --  STREAM VARIABLE  --  DECLARED AT 16823100
        16823800
EUM  --  REAL  --  DECLARED AT 40005100
        40100300  40100600  40100800  40101300 *40292050*
EUMASK  --  REAL  --  DECLARED AT 40005110
       *40334075* 40334085
EUNOTSQUASHED  --  REAL  --  DECLARED AT 06068900
        06069000  06074200 *06101300**06108600* 06113500
EUNP  --  DEFINE  --  DECLARED AT 05780025
        06108300  16826600
EUNUM  --  STREAM VARIABLE  --  DECLARED AT 39905000
       *39909000* 39910000  39918000
EUS  --  REAL ARRAY  --  DECLARED AT 06069300
        06069400  06074000 *06077500**06085200**06085700* 06101700  06108400  06108800
EUSU  --  REAL  --  DECLARED AT 40004500
       *40261100* 40261300 *40261500*
EUTAPER  --  DEFINE  --  DECLARED AT 00165810
        22011500
EUVAL  --  REAL  --  DECLARED AT 20016600
        20016700 *20065200* 20065300 *20065400* 20065900  20066000
EU1  --  STREAM VARIABLE  --  DECLARED AT 06077900
        06080600  06083100
EU2  --  STREAM VARIABLE  --  DECLARED AT 06077900
       *06083100*
EVENTANDINTERRUPT  --  PROCEDURE  --  DECLARED AT 19900900  --  FORWARD AT 18468200
        19685596  19906300
EX  --  STREAM LABEL  --  DECLARED AT 07461320  --  OCCURS AT 07461540
        07461330  07461520
EX  --  DEFINE  --  DECLARED AT 08100600
        08104550  08105600
EX  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16745000
        16704000
EX  --  LABEL  --  DECLARED AT 18205000  --  OCCURS AT 18462000
EXCEPT  --  DEFINE  --  DECLARED AT 20247970
        20569990  20573500
EXEC  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20605300
        20597950
EXECU  --  DEFINE  --  DECLARED AT 20221000
```

```
          20604550  20604750  20605300
EXIT  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01261300
          01257000  01258100  01260200  01260455  01260465
EXIT  --  STREAM LABEL  --  DECLARED AT 02613000  --  OCCURS AT 02631000
          02615300  02617000  02622000  02624000  02627000  02629000
EXIT  --  LABEL  --  DECLARED AT 04004000  --  OCCURS AT 04015000
          04012000
EXIT  --  LABEL  --  DECLARED AT 04555000  --  OCCURS AT 04651000
          04567040  04567855  04568374  04588000  04588090  04588180  04588560  04602000  04639200
EXIT  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04687550
          04674900  04686850  04687300
EXIT  --  LABEL  --  DECLARED AT 04705000  --  OCCURS AT 04742000
          04709000  04720000
EXIT  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05979310
          05954400  05955400  05956600  05956700  05960200  05960685  05966110  05975640  05979100
EXIT  --  LABEL  --  DECLARED AT 06408000  --  OCCURS AT 06424000
          06411030  06420000
EXIT  --  LABEL  --  DECLARED AT 07003410
EXIT  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07232000
          07059112  07118520  07129100
EXIT  --  LABEL  --  DECLARED AT 07270000  --  OCCURS AT 07292000
          07275000
EXIT  --  LABEL  --  DECLARED AT 07300000  --  OCCURS AT 07351000
          07310000
EXIT  --  LABEL  --  DECLARED AT 07408500  --  OCCURS AT 07420100
          07409000  07415100
EXIT  --  LABEL  --  DECLARED AT 07423000  --  OCCURS AT 07455000
          07426100  07427610  07430000  07432000  07437400  07450000
EXIT  --  LABEL  --  DECLARED AT 07474000  --  OCCURS AT 07484000
          07481008
EXIT  --  LABEL  --  DECLARED AT 08002000  --  OCCURS AT 08022000
          08007000  08016000
EXIT  --  LABEL  --  DECLARED AT 08025000  --  OCCURS AT 08052000
          08029000  08030500  08032000  08033994
EXIT  --  LABEL  --  DECLARED AT 08082000  --  OCCURS AT 08093000
          08083000
EXIT  --  LABEL  --  DECLARED AT 08100350  --  OCCURS AT 08104250
          08103800  08110750
EXIT  --  STREAM LABEL  --  DECLARED AT 08110750  --  OCCURS AT 08111250
          08111050  08111100  08111150
EXIT  --  LABEL  --  DECLARED AT 08393000  --  OCCURS AT 08416000
          08413000
EXIT  --  LABEL  --  DECLARED AT 08419000  --  OCCURS AT 08437100
          08429000
EXIT  --  LABEL  --  DECLARED AT 08442000  --  OCCURS AT 08509000
          08486000
EXIT  --  LABEL  --  DECLARED AT 08547100  --  OCCURS AT 08566000
          08547600
EXIT  --  LABEL  --  DECLARED AT 08568300  --  OCCURS AT 08573100
          08569100
EXIT  --  LABEL  --  DECLARED AT 08576100
EXIT  --  STREAM LABEL  --  DECLARED AT 08683000  --  OCCURS AT 08687000
EXIT  --  STREAM LABEL  --  DECLARED AT 08740000  --  OCCURS AT 08753000
          08746000  08749000  08749500  08750000
EXIT  --  LABEL  --  DECLARED AT 08802000  --  OCCURS AT 08848000
          08828000
EXIT  --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08997000
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          08901500  08904000  08906000  08911050  08926000  08927000
EXIT   --  LABEL  --  DECLARED AT 09602000  --  OCCURS AT 09676000
          09633000  09634200
EXIT   --  LABEL  --  DECLARED AT 09679400  --  OCCURS AT 09682600
          09681400  09681550
EXIT   --  LABEL  --  DECLARED AT 14164500  --  OCCURS AT 14301100
          14186180  14212300  14228000  14243000
EXIT   --  LABEL  --  DECLARED AT 15112700  --  OCCURS AT 15116000
          15114400  15115500
EXIT   --  LABEL  --  DECLARED AT 15537000  --  OCCURS AT 15554000
          15542000
EXIT   --  LABEL  --  DECLARED AT 16053000  --  OCCURS AT 16343900
          16133000  16155000  16169000  16248000  16252000  16255000
EXIT   --  LABEL  --  DECLARED AT 16354000  --  OCCURS AT 16689400
          16390000  16394000  16406000  16410000  16485000  16492000  16495000  16498000  16501000  16527000  16530000
          16534000  16537000  16540000  16543000  16589000  16610700  16615000  16615200
EXIT   --  LABEL  --  DECLARED AT 16699000  --  OCCURS AT 16902900
          16737000  16741500  16747000  16749000  16750500  16797500  16802000  16803500  16805500  16819500  16822000
EXIT   --  LABEL  --  DECLARED AT 16914000  --  OCCURS AT 16968000
          16961000  16966000
EXIT   --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18463000
          18212000  18218000  18255200  18262000  18266000  18284000  18296000  18425800
EXIT   --  STREAM LABEL  --  DECLARED AT 18820900  --  OCCURS AT 18821400
          18821000  18821100  18821200
EXIT   --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20080000
          20025900  20029000  20032875  20036400  20038000  20047500
EXIT   --  STREAM LABEL  --  DECLARED AT 20032875  --  OCCURS AT 20032950
          20032900
EXIT   --  LABEL  --  DECLARED AT 20085800  --  OCCURS AT 20140000
EXIT   --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20485000
          20449000  20461000  20461950  20467000  20477000
EXIT   --  LABEL  --  DECLARED AT 20511171
EXIT   --  LABEL  --  DECLARED AT 20584250  --  OCCURS AT 20586600
          20585250  20585350  20585380
EXIT   --  LABEL  --  DECLARED AT 20586715  --  OCCURS AT 20589600
          20587700  20587850  20587950  20588360
EXIT   --  LABEL  --  DECLARED AT 20589720  --  OCCURS AT 20590750
          20590300  20590730
EXIT   --  LABEL  --  DECLARED AT 20590910  --  OCCURS AT 20594750
          20591750  20591850  20592800  20594400  20594500  20594550
EXIT   --  LABEL  --  DECLARED AT 20594870  --  OCCURS AT 20596650
          20595750  20596500
EXIT   --  LABEL  --  DECLARED AT 20597850  --  OCCURS AT 20610250
          20599100
EXIT   --  LABEL  --  DECLARED AT 22235700  --  OCCURS AT 22429100
          22320100  22325410  22351000  22356000  22356400  22364000  22365400  22383100  22386500  22386600  22405000
          22411000
EXIT   --  LABEL  --  DECLARED AT 24113000  --  OCCURS AT 24157000
          24147000
EXIT   --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28101200
          28053000  28067000  28067400  28075400  28094200  28097400  28101000
EXIT   --  LABEL  --  DECLARED AT 32000280  --  OCCURS AT 32002350
          32001600
EXIT   --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37175000
          37046320  37046640  37046845  37047100  37047660
EXIT   --  LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37269000
          37185390  37221500  37234250  37248500  37264000
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EXIT -- LABEL -- DECLARED AT 37422300 -- OCCURS AT 37447500
        37428300
EXIT -- LABEL -- DECLARED AT 37505000 -- OCCURS AT 37545000
        37510000  37530100
EXIT -- LABEL -- DECLARED AT 38009100 -- OCCURS AT 38099100
        38013600
EXIT -- LABEL -- DECLARED AT 39009000 -- OCCURS AT 39307000
        39096000  39156000  39258000
EXIT -- LABEL -- DECLARED AT 40008050
EXIT -- LABEL -- DECLARED AT 41316500 -- OCCURS AT 41323000
EXIT -- LABEL -- DECLARED AT 41600500 -- OCCURS AT 41607600
        41601900
EXITS -- STREAM LABEL -- DECLARED AT 08822000 -- OCCURS AT 08824000
EXITTOCOM19 -- LABEL -- DECLARED AT 12812500 -- OCCURS AT 12901500
        12879000  12891000
EXP -- STREAM LABEL -- DECLARED AT 18820800 -- OCCURS AT 18821200
EXPIRED -- DEFINE -- DECLARED AT 20228300
        20569690
EXPIRED -- DEFINE -- DECLARED AT 28404200
        28417800  28418000
EXPUNDERFLOW -- LABEL -- DECLARED AT 42511000 -- OCCURS AT 42542000
        42512000
EXRUN -- LABEL -- DECLARED AT 20597700 -- OCCURS AT 20605320
        20605650
EXT -- STREAM LABEL -- DECLARED AT 05952885 -- OCCURS AT 05952960
        05952940
EXT -- STREAM LABEL -- DECLARED AT 05978500 -- OCCURS AT 05978950
        05978600  05978650  05978750  05978900
EXT -- STREAM LABEL -- DECLARED AT 06075700 -- OCCURS AT 06076800
EXT -- STREAM LABEL -- DECLARED AT 06081700 -- OCCURS AT 06084000
        06082300  06083600  06083800
EXT -- STREAM LABEL -- DECLARED AT 16609500 -- OCCURS AT 16610100
        16609700  16609900
EXT -- STREAM LABEL -- DECLARED AT 16823700 -- OCCURS AT 16825200
        16824800
EXT -- LABEL -- DECLARED AT 18202000 -- OCCURS AT 18235000
        18231000
EXTERNAL -- LABEL -- DECLARED AT 00008000 -- OCCURS AT 48016000
        02029000  04038000  04158000  46011500  46012000  46012500  48120000  48125000  48127000  48133000
EXTERNALEND -- PROCEDURE -- DECLARED AT 07473100
        16542000
EXYT -- LABEL -- DECLARED AT 06462200 -- OCCURS AT 06466600
        06463225  06463925  06463950  06463980  06464400
EXYT -- LABEL -- DECLARED AT 20511160 -- OCCURS AT 20511800
        20511430
F -- REAL -- VALUE PARAMETER -- DECLARED AT 00426700
F -- REAL -- VALUE PARAMETER -- DECLARED AT 00452800
        00452600  00452700
F -- REAL -- VALUE PARAMETER -- DECLARED AT 02393500
        02393400
F -- REAL -- VALUE PARAMETER -- DECLARED AT 02696100
        02696000  02696100
F -- REAL ARRAY -- VALUE PARAMETER -- DECLARED AT 02696300
F -- REAL ARRAY -- VALUE PARAMETER -- DECLARED AT 02696500
F -- REAL -- DECLARED AT 04354400
        04359400 *04373600**04376200**04381800**04386400**04388200**04392600**04395600**04403200**04404400**04405800*
       *04410800**04416000**04419400**04423200**04424800* 04425200  04426800  04432600
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F  --  STREAM LABEL  --  DECLARED AT 04647200  --  OCCURS AT 04647450
F  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05845000
        05845200
F  --  INTEGER  --  DECLARED AT 05847600
        05852350
F  --  REAL  --  DECLARED AT 06068300
       *06097100**06098400*
F  --  REAL  --  DECLARED AT 07244000
       *07256400* 07256600 *07257800* 07264400
F  --  STREAM VARIABLE  --  DECLARED AT 07295030
        07295130
F  --  REAL  --  DECLARED AT 07355000
       *07370000* 07371000  07371100 *07371500* 07372900
F  --  REAL  --  DECLARED AT 08255400
       *08274250* 08274260  08274500 *08276000* 08276520
F  --  STREAM VARIABLE  --  DECLARED AT 08709600
        08710000
F  --  STREAM VARIABLE  --  DECLARED AT 12575000
F  --  STREAM VARIABLE  --  DECLARED AT 12582500
F  --  STREAM VARIABLE  --  DECLARED AT 12631000
F  --  REAL  --  DECLARED AT 14624450
        14645600
F  --  STREAM VARIABLE  --  DECLARED AT 14645600
        14650000  14650400
F  --  STREAM VARIABLE  --  DECLARED AT 15404000
        15410000
F  --  STREAM VARIABLE  --  DECLARED AT 16828300
F  --  REAL  --  DECLARED AT 18198000
        18240000  18241000 *18273040* 18273050  18273055 *18276500**18286000* 18461000  18465000
F  --  STREAM VARIABLE  --  DECLARED AT 18528200
        18528500
F  --  REAL  --  DECLARED AT 19696100
       *19738100* 19775100
F  --  REAL  --  DECLARED AT 20011600
        20021200  20030500  20034300  20034500  20035700  20035900  20046700  20061100
F  --  STREAM VARIABLE  --  DECLARED AT 20061100
        20061300  20061900
F  --  REAL  --  DECLARED AT 20080800
        20089100
F  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20140800
F  --  REAL  --  DECLARED AT 20141200
        20149900  20150100  20150200  20176024  20199200
F  --  REAL  --  DECLARED AT 22061120
        22061130 *22069050* 22069060 *22069120* 22069500
F  --  REAL  --  DECLARED AT 24004000
       *24007000* 24007200  24009000  24010000
F  --  STREAM VARIABLE  --  DECLARED AT 28248600
F  --  STREAM VARIABLE  --  DECLARED AT 28291200
F  --  STREAM VARIABLE  --  DECLARED AT 32000510
F  --  STREAM VARIABLE  --  DECLARED AT 37256000
F  --  STREAM VARIABLE  --  DECLARED AT 37314000
F  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
        37357300  37357400
FA --  REAL  --  DECLARED AT 28001200
        28074400  28074600  28094500  28094600  28096000  28096200  28097000  28097100
FA --  REAL  --  DECLARED AT 28201600
        28253200  28307720
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FA  --  REAL  --  DECLARED AT 28400800
        28427800  28429200  28429400  28429600  28429800 *28430000* 28430200  28430600  28432600  28432800  28434000
        28435600  28436200  28436400  28436800  28437000  28437400  28437800  28438000 *28441600* 28441800  28442800
       *28443000* 28443400 *28452600* 28452600  28453200  28453400  28453800  28454200 *28456800* 28457200  28457400
FACTOR  --  DEFINE  --  DECLARED AT 06070800
        06111000  06111800
FACTOR  --  REAL  --  DECLARED AT 06801000
        06826000  06828000  06829000 *06838000* 06839000
FAIL  --  LABEL  --  DECLARED AT 07299600  --  OCCURS AT 07303500
        07318010
FAIL  --  LABEL  --  DECLARED AT 37180650  --  OCCURS AT 37195100
FAIN  --  REAL  --  DECLARED AT 28001400
        28001600  28012800
FAIN  --  REAL  --  DECLARED AT 28201800
        28202000
FAIN  --  REAL  --  DECLARED AT 28400800
        28427800 *28428000* 28428400  28430600  28431000  28431800  28432800 *28433600* 28434000  28436000  28436200
       *28442000* 28442800 *28443600**28454400**28457600* 28458600  28482400
FAINFO  --  REAL  --  DECLARED AT 28001200
        28001400  28013000  28074200  28074800  28093800  28093900  28099200
FAINFO  --  REAL  --  DECLARED AT 28201600
        28201800  28246800  28265400  28270830  28307710
FAINFO  --  REAL  --  DECLARED AT 28400800
       *28430200* 28431000  28431800  28433000  28434000 *28441800**28443400**28452800* 28454600 *28457200*
FALLOUT  --  LABEL  --  DECLARED AT 28211000  --  OCCURS AT 28303800
        28270200
FAROUT  --  REAL  --  DECLARED AT 20397050
       *20415200* 20489100
FAST  --  DEFINE  --  DECLARED AT 20247900
        20484650  20567255
FASZ  --  REAL  --  DECLARED AT 28001400
        28074400  28074600  28087000  28095800  28096000  28097000
FASZ  --  REAL  --  DECLARED AT 28201800
        28246200  28246400  28297200  28302600  28307700
FASZ  --  REAL  --  DECLARED AT 28400800
        28428400 *28429000* 28429400  28429600  28430200  28432400  28433200  28441800 *28443200* 28443400 *28454400*
        28454600 *28457000* 28457200 *28482400*
FB  --  REAL  --  DECLARED AT 20017500
        20017600 *20049800* 20053200  20063500  20066600
FB  --  STREAM VARIABLE  --  DECLARED AT 20053200
FBADRS  --  REAL  --  DECLARED AT 20016700
        20016800 *20063500* 20064100  20065600  20065800  20066000
FBADRS  --  STREAM VARIABLE  --  DECLARED AT 20064100
FE  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16590000
        16366000
FER  --  STREAM LABEL  --  DECLARED AT 12659500  --  OCCURS AT 12660000
FERGIT  --  LABEL  --  DECLARED AT 16699000  --  OCCURS AT 16819300
        16812000
FETCH  --  PROCEDURE  --  DECLARED AT 20292000
        20325000  20374400  20608070  20608200  20608700
FF  --  FIELD  --  DECLARED AT 00060090
        00060110  00656400  02006000  02007300  02061000  02063000  02077000  02089000  02186000  02275600  02275850
        02275950  02285000  02287000  02287100  02287120  02294000  04137270  04137280  04190000  04194550  04280400
        04299200  04391560  04391570  04421900  04426600  04569100  04569200  04671750  04682250  04685400  04686600
        04686700  04711000  04728000  05976000  06077400  06090000  06107900  06108200  06203600  06203700  06463380
        06463988  07026500  07062000  07257800  07262200  07311500  07313000  07548100  08177000  08177200  08179600
        08179800  08259450  08270450  08276000  08276400  08705000  08839000  08931000  08939000  08942000  08944500
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          09505000  12271500  12454000  12454500  12473060  12473070  12473080  12863500  14199000  14351350  14351400
          14351410  14351420  14358580  14358584  14358595  14358598  14358600  14358800  14382000  14383900  14389000
          14391000  14392500  14394000  14395000  14398700  14431440  14431450  14431460  14555500  14595000  14596000
          14598000  14603330  15114700  15601000  15602600  15604200  16118200  16206100  16225000  16238000  16239000
          16343950  16610300  16689450  16825500  16825900  16902950  16918500  16956000  17000900  17005600  18012000
          18016000  18017000  18022000  18046000  18047500  18053000  18059000  18063000  18068000  18075500  18228500
          18276000  18289000  18422000  18720800  18810200  18810300  18840300  18841600  18844200  18844400  19685020
          19685065  19685350  19685370  19685452  19714000  19739000  19779000  19783000  19900610  19900620  19900630
          19900815  19902000  19902120  19902150  19902200  19902300  19902350  19902900  19903600  19903670  19903825
          19903830  19903850  19904360  19905200  20021400  20035700  20036200  20089300  20092000  20092300  20120000
          20150200  20165300  20170600  20173900  20176105  20382540  20489200  20489300  20511610  20567340  20567360
          20570055  20570232  20576210  20581950  20583250  20585100  20585125  20588550  20589480  20595350  20595400
          20601600  20606910  20606920  20610400  20704250  20758000  22069120  22069340  22259000  22277000  22286030
          22286040  22286110  22301000  22309000  22312000  22323000  22324800  22327600  22356200  22357000  22365200
          22377000  22386250  22387000  22393000  22395000  22397000  22399000  22421000  24006000  24007000  24030000
          24033700  24033800  24034500  24035100  24036400  24037100  24037300  24037500  24038400  24038800  24153000
          24221000  28013400  28093600  28099000  28254000  28265200  28272800  28425000  28425200  28459000  28823000
          28857000  28882400  28887000  37046835  37046855  37046860  37047605  37048000  37230000  37232500  37241525
          37327000  37328000  37332000  38045105  38250000  38266500  38267000  38288500  38291000  38378000  38435000
          38440000  38573100  38575000  38577000  38583000  38594300  38595000  38642000  39306300  40017200  40041000
          40046000  40057000  40078058  40278200  40293090  41051500  41310900  41311000  41318360  41318370  41319000
          41319080  41320260  41321650  41329900  41331000  41602600  42478400  42525150  42535500  42551090  42551100
          44037300  44136000  44138000  44201500  44201600  44240620  44240690  45092190  48015400  48031100  48054000
          48054400  48065000  48079100
FH  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00490000
          00489000  00490000
FH  --  REAL ARRAY  --  DECLARED AT 06462110
         *06463900*  06463910  06463930  06463940  06463960  06463970  06466620
FH  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 09500000
          09505000  09505500
FH  --  REAL  --  DECLARED AT 09602000
         *09633000*  09633100  09634000  09657000  09658000
FH  --  REAL ARRAY  --  DECLARED AT 18200000
         *18273050**18276500**18277500**18286000*  18292100  18293200  18299000  18308000  18309000 *18314100**18314200*
         *18321100*  18324000 *18327100*  18333000 *18336100*  18342000  18343000 *18345000*  18357100 *18357200**18357300*
         *18361100**18361200**18365100**18369100**18372000*  18389000 *18392100**18399100*  18422000 *18425100*  18425300
          18425600 *18426100*  18428000  18429000 *18431050*  18431300  18431400 *18432100**18432150**18432200*  18432600
          18433000  18438100 *18438170*  18445000  18446000  18455000  18460000 *18462000*
FH  --  DEFINE  --  DECLARED AT 20704100
          20704220  20704230  20704240
FH  --  REAL  --  DECLARED AT 41316300
          41316515  41316520  41316525  41316580  41316590 *41317800**41318210*  41318220  41318230  41318240  41318360
          41318370  41318400  41318610  41318620  41318680  41318740  41320260  41320410  41320420  41320430  41320440
          41321650  41323400  41323500  41323550
FI  --  REAL  --  DECLARED AT 40007500
         *40283500*  40317500
FIB  --  REAL ARRAY  --  DECLARED AT 02191500
         *02275000*  02275100  02275450 *02275500*  02275600  02275650  02275850 *02275950**02276200**02276270*  02276300
          02276350 *02276360*  02276370  02276400 *02287200*  02287210  02313500
FIB  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121550
          04121500  04121550
FIB  --  REAL ARRAY  --  DECLARED AT 04668800
         *04674050*  04674100  04674150  04674200  04674225  04674250  04674300  04674350  04674400 *04677400*  04677450
         *04677550**04678900*  04679050 *04683400**04684850**04685500**04685550**04685650**04685750*  04686450
FIB  --  DEFINE  --  DECLARED AT 08173100
          08176000  08177000  08177100  08177200  08178000  08179600  08179800
FIB  --  REAL ARRAY  --  DECLARED AT 14624600
```

```
      *14644000* 14644400  14645600 *14675000**14681000* 14682000  14683000  14684000  14687000  14688000 *14698000*
       14699000  14701000  14702600  14703000
FIB   --  REAL ARRAY  --  DECLARED AT 15065000
      *15073000**15080000* 15081000 *15082000**15083000* 15098000 *15101000**15102000* 15103000 *15104000*
FIB   --  REAL ARRAY  --  DECLARED AT 18502400
      *18523700* 18523900  18524000  18524400  18524500 *18552800* 18552900  18553000
FIB   --  REAL ARRAY  --  DECLARED AT 19521000
FIB   --  REAL ARRAY  --  DECLARED AT 38008000
      *38013100* 38013300  38013400  38013900  38014100  38015000  38020000  38024100 *38028000**38032000**38033000*
       38034000 *38036000* 38037000 *38038000* 38041000 *38041100* 38044000 *38045000**38045100**38045105* 38045155
       38049300 *38049700**38055000**38056000* 38059000  38060000  38062500 *38064600* 38066000  38070000  38082500
      *38090000* 38093000  38094000  38095000 *38096000**38097000*
FIB   --  REAL ARRAY  --  DECLARED AT 38102800
      38112000 *38114000* 38125000 *38149500* 38151900 *38156500**38157500**38158000*
FIB   --  REAL ARRAY  --  DECLARED AT 38200800
      38212000 *38216000**38234500**38240500**38245500**38248500**38249000**38250000* 38266000 *38266500**38267000*
      38276000  38279000  38288500 *38289500**38291000* 38297000
FIB   --  REAL ARRAY  --  DECLARED AT 38357000
      38377400  38388000  38389200  38389300  38389400 *38389500**38389700* 38389800 *38389900* 38390100 *38390200*
      *38390500* 38391030 *38391050* 38391060  38391080 *38391090* 38398000  38400000  38401000  38402000  38404000
       38405000  38406000  38406500  38411100  38411300  38411500  38411600  38411750  38422000  38431000  38507800
       38508000 *38528000*
FIB   --  REAL ARRAY  --  DECLARED AT 38542000
      38571000 *38572000* 38573100  38574000  38575000 *38577000* 38581200 *38581400* 38581800  38581920  38582000
      38585000 *38586000* 38587000  38588000  38594300 *38595000* 38597000  38610250 *38610600*
FIB   --  REAL ARRAY  --  DECLARED AT 38650000
      38681000 *38682000* 38683000  38688000 *38690000* 38702000  38762000 *38773000**38773100* 38803000
FIB   --  REAL ARRAY  --  DECLARED AT 39005000
      *39032000**39035000* 39042000 *39042100**39083000* 39084000  39088000  39089000  39090000  39091000  39091100
       39092000  39092010  39092020  39146000 *39147000**39148000* 39230000 *39232000**39233000**39294000**39295000*
      *39296000**39297000* 39299000 *39300000**39301000**39301100**39303000* 39304000 *39306000* 39306100  39307200
FIB   --  REAL ARRAY  --  DECLARED AT 41001000
      *41040000* 41041000  41042000  41043000  41044000  41045000  41049000  41051000  41051100  41051200  41051400
       41051620  41052000 *41194000* 41195000 *41204000**41211000* 41212100  41212200
FIB   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41312100
      41312000  41312100  41313600  41313800  41313900
FIB7  --  INTEGER  --  DECLARED AT 38009000
      *38060000* 38062500 *38063000**38064600* 38075500  38091000
FIB7  --  INTEGER  --  DECLARED AT 38102900
FIB7  --  INTEGER  --  DECLARED AT 38200900
FIB7  --  INTEGER  --  DECLARED AT 39006000
FID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
      00371000  00372000
FID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
      00374000  00375000
FID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
      00390000  00390100
FID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00395000
      00393000  00394000
FID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02637000
      02635000  02636000  02641000
FID   --  STREAM VARIABLE  --  DECLARED AT 02641000
FID   --  REAL  --  DECLARED AT 05950800
      05950900  05953130  05953135 *05953600* 05953800  05958600  05959200  05960600  05960650  05960660  05964000
      05967900 *05977600*
FID   --  STREAM VARIABLE  --  DECLARED AT 05953135
FID   --  STREAM VARIABLE  --  DECLARED AT 05959200
```

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        05959600
FID  --  STREAM VARIABLE  --  DECLARED AT 05964000
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06460200
        06460000  06460100  06463200  06463225  06463240  06463580 *06463620*
FID  --  REAL  --  DECLARED AT 08099400
        08102150  08102200  08102300  08102550 *08102600* 08102700 *08102750* 08104900
FID  --  REAL  --  DECLARED AT 12503000
        12503500  12539000  12562000  12567500  12572500  12575000  12581000  12582500  12584500 *12590000* 12592500
        12629500  12630000  12631000  12632000 *12681500**12687700**12713500* 12749500
FID  --  REAL  --  DECLARED AT 12803000
        12803500
FID  --  REAL  --  DECLARED AT 13004000
FID  --  REAL  --  DECLARED AT 14624100
FID  --  REAL  --  DECLARED AT 19688050
       *19696700* 19698000  19699000  19768000  19768200  19799000
FID  --  STREAM VARIABLE  --  DECLARED AT 19768200
FID  --  REAL  --  DECLARED AT 28000600
        28000800  28011200  28011830  28013600  28087400
FID  --  REAL  --  DECLARED AT 28201000
        28201200  28212000 *28253200* 28263400  28266400  28270816  28270820  28281800  28283600  28287000  28291200
        28296400  28299600 *28307720* 28307725
FID  --  STREAM VARIABLE  --  DECLARED AT 28263400
FID  --  REAL  --  DECLARED AT 28400600
        28408400  28415200  28415400  28417000  28419000  28419600  28425600  28426200  28446300  28448000 *28467800*
        28473200 *28473400**28476400**28480200*
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
        37000000  37001000  37046730  37046835  37046980  37047625  37096000  37174000
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37190000  37195600 *37195650**37195750* 37216000  37224200 *37232250* 37236000 *37236750*
        37240200  37242300  37261000
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37286200
        37286000  37286100  37292800
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000
FID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37420000
        37418000  37419000  37424200  37428100
FID  --  REAL  --  DECLARED AT 38007000
        38013030 *38013040* 38013300  38014900  38045120  38045400 *38066000**38070000* 38080500 *38088000*
FID  --  REAL  --  DECLARED AT 38102700
        38105800  38113000  38151000  38159500 *38163000* 38164500
FID  --  STREAM VARIABLE  --  DECLARED AT 38159500
        38162000
FID  --  REAL  --  DECLARED AT 38200700
        38203800  38213500  38231500  38252000  38275500  38287500  38296750
FID  --  REAL  --  DECLARED AT 38362000
        38401000  38411500  38453000  38456000  38461000  38464000  38499000  38509000  38512000  38513000  38515000
        38518500
FID  --  REAL  --  DECLARED AT 38547000
        38610200
FID  --  REAL  --  DECLARED AT 38655000
FID  --  REAL  --  DECLARED AT 39004100
       *39091000* 39143000
FID  --  REAL  --  DECLARED AT 41003000
        41190800
FID  --  REAL  --  DECLARED AT 41316400
       *41317710**41318380* 41320400  41321600
FILEBIT  --  FIELD  --  DECLARED AT 00061040
```

```
FILEBLOCK -- REAL ARRAY -- VALUE PARAMETER -- DECLARED AT 06182000
      06180000  06181000  06209000  06230100  06234000  06244000
FILEBLOCK -- REAL ARRAY -- DECLARED AT 14351000
     *14356000* 14430800
FILECLOSE -- PROCEDURE -- DECLARED AT 00389100
      02266300  02314000  02321000  02325000  14259000  15100000  18525600  18527300  18527700  19571000  37123000
      37240600  37244000  42493000  42497000
FILEHEADER -- REAL PROCEDURE -- DECLARED AT 37418000 -- FORWARD AT 00393000
     *37447000* 37448000  38013100
FILEHOLD -- PROCEDURE -- DECLARED AT 18000000
      18035000  18255000  18260000  18265000  18460000  20704260
FILEID -- LABEL -- DECLARED AT 05952620 -- OCCURS AT 05956650
      05957400
FILEMESS -- DEFINE -- DECLARED AT 00452300
      06463220  06463230  12619000  12636500  12899000  14015220  18027000  18770700  36006000  37046680  37215000
      37224000  37240200  37285310  37384000  37424200  38045120  38105700  38151000  38203700  38296750  38455000
      38463000  39143000
FILEMESSAGE -- PROCEDURE -- DECLARED AT 37357300 -- FORWARD AT 00452600
      02668500  04681800  06463225  06463240  07074100  08714300  12619000  12637000  12899000  14015220  18027000
      18770900  28032000  36006000  37046730  37216000  37224200  37240200  37285320  37424200  38045120  38045160
      38104700  38105800  38151000  38202700  38203800  38230000  38296750  38456000  38464000  38610100  39143000
      41190600
FILEOK -- REAL -- DECLARED AT 06069000
     *06092400* 06092900 *06093600*
FILEOPEN -- PROCEDURE -- DECLARED AT 39000000 -- FORWARD AT 00379000
      00379200  15086000  19569000  39308000
FILEV -- DEFINE -- DECLARED AT 20228200
      20398000  20604300  20714500
FILLBUFFERS -- PROCEDURE -- DECLARED AT 37385000 -- FORWARD AT 00385000
      38025000  38152000  38297500  39144000  39146000  39230000  39244000  39293400
FILTOG -- REAL -- DECLARED AT 05952270
      05952300  05953045  05953135  05953140  05953195 *05956800* 05960680
FILTOG -- STREAM VARIABLE -- DECLARED AT 05953135
      05953175
FIN -- REAL -- DECLARED AT 04068000
      04071000  04072000  04073000 *04074000**04078000**04080000**04081000**04086000**04091000*
FIN -- REAL -- DECLARED AT 04127000
     *04205000* 04225000  04228000  04234000
FIN -- REAL -- DECLARED AT 04258200
     *04304600**04309600* 04309800
FIN -- REAL -- DECLARED AT 04355600
     *04425400* 04427200 *04428000* 04429200
FIN -- REAL -- DECLARED AT 06004000
     *06016100* 06017000
FINAL -- REAL -- VALUE PARAMETER -- DECLARED AT 00385500
      00385000  00385500
FINAL -- REAL ARRAY -- VALUE PARAMETER -- DECLARED AT 04042000
      04040000  04041000  04064000
FINAL -- REAL -- DECLARED AT 07269100
     *07290600* 07295030
FINAL -- REAL ARRAY -- DECLARED AT 14624400
      14707000
FINAL -- LABEL -- DECLARED AT 24112000 -- OCCURS AT 24144000
      24130000
FINAL -- REAL -- VALUE PARAMETER -- DECLARED AT 37386000
      37385000  37385500  37388400 *37388800* 37389000  37393000  37394050  37394200 *37399000*
FINALIN -- LABEL -- DECLARED AT 39009000 -- OCCURS AT 39148000
```

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        39246000
FINALOUT  --  LABEL  --  DECLARED AT 39009000  --  OCCURS AT 39230000
        39239000
FINALQUE  --  REAL ARRAY  --  DECLARED AT 00173000
       *04064000* 04131000  04137140  04169000  04205000  04279200  04282000  04284600  04285000  04300200  04304600
        04309600  04316600  04366400  04367000  04373000  04428000 *04565000* 04569200 *04672000**04685250* 44169000
FIND  --  LABEL  --  DECLARED AT 20382030  --  OCCURS AT 20382640
        20382480  20382500
FIND  --  SUBROUTINE  --  DECLARED AT 24124000
        24148000  24153000  24155000
FIND  --  LABEL  --  DECLARED AT 38103300  --  OCCURS AT 38191500
        38114000  38152100
FIND  --  LABEL  --  DECLARED AT 38201300  --  OCCURS AT 38298000
        38234500  38268000  38279000  38291000
FIND  --  LABEL  --  DECLARED AT 39054000  --  OCCURS AT 39231000
        39156000
FINDBUF  --  LABEL  --  DECLARED AT 14628000  --  OCCURS AT 14660500
        14632200
FINDFILE  --  REAL SUBROUTINE  --  DECLARED AT 12561000
        12568500  12576000  12585000  12682500  12714500
FINDINGADDRESS  --  DEFINE  --  DECLARED AT 00081700
FINDINPUT  --  REAL PROCEDURE  --  DECLARED AT 37177000  --  FORWARD AT 00374000
        07072400  12537000  18555700  28028000 *37269000* 37270000  38113000
FINDIT  --  LABEL  --  DECLARED AT 00057100
FINDIT  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28027800
        28030000
FINDOUTPUT  --  REAL PROCEDURE  --  DECLARED AT 37000000  --  FORWARD AT 00371000
        02663000  04681250 *37175000* 37176000  38213500
FINDSEG  --  REAL SUBROUTINE  --  DECLARED AT 24115000
        24122000  24123000  24130000  24142000
FINDTHETAPE  --  SUBROUTINE  --  DECLARED AT 28027400
        28039600  28055200  28067400
FINDTHETAPF  --  DEFINE  --  DECLARED AT 28207400
        28228600
FINDX  --  LABEL  --  DECLARED AT 20596760  --  OCCURS AT 20597450
        20596950  20597000  20597050
FINI  --  STREAM LABEL  --  DECLARED AT 20600200  --  OCCURS AT 20600360
        20600270
FINIS  --  LABEL  --  DECLARED AT 05952620  --  OCCURS AT 05977800
        05977200
FINIS  --  LABEL  --  DECLARED AT 20597850  --  OCCURS AT 20609600
        20604360
FINIS  --  STREAM LABEL  --  DECLARED AT 28411400  --  OCCURS AT 28413600
        28413000
FINIS  --  STREAM LABEL  --  DECLARED AT 28421800  --  OCCURS AT 28423600
        28422400
FINISHDETAIL  --  SUBROUTINE  --  DECLARED AT 04282600
        04352400
FINISHED  --  LABEL  --  DECLARED AT 12371000  --  OCCURS AT 12473500
        12402000  12406000
FINISHOFFIO  --  PROCEDURE  --  DECLARED AT 04067000
        04220000  04428800
FINISHUP  --  LABEL  --  DECLARED AT 41316500  --  OCCURS AT 41323140
        41320270
FIRETUP  --  LABEL  --  DECLARED AT 08255800  --  OCCURS AT 08271750
        08259700  08259870
FIRST  --  REAL  --  DECLARED AT 07006100
```

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        07059010  07059110 *07109000* 07116000 *07118510* 07124000 *07126500* 07139511 *07169100*
FIRST  --  REAL  --  DECLARED AT 07269100
       *07273100* 07290300 *07290400*
FIRST  --  REAL  --  DECLARED AT 37180000
       *37225000**37225100* 37226000  37229500 *37251000* 37252000 *37253000* 37266000 *37267000**37267050*
FIRSTCARD  --  REAL  --  DECLARED AT 07006020
       *07087000* 07118000  07139530  07156000  07179260  07214100  07236000
FIRSTCARD  --  STREAM VARIABLE  --  DECLARED AT 07139530
       07139540
FIRSTCARD  --  STREAM VARIABLE  --  DECLARED AT 07156000
       07159000
FIRSTCARD  --  STREAM VARIABLE  --  DECLARED AT 07214100
       07217000
FIRSTDECK  --  REAL  --  DECLARED AT 07000200
       07273000  07313000 *07314110* 07371400  07432000 *07560000*
FIRSTFID  --  REAL  --  DECLARED AT 12504000
       12504500  12506000 *12584500* 12629500 *12679500* 12681500  12713500 *12723000*
FIRSTFID  --  REAL  --  DECLARED AT 12804000
       12804500  12806000
FIRSTFID  --  REAL  --  DECLARED AT 13005000
       13008000
FIRSTIME  --  REAL  --  DECLARED AT 20566270
       20566280 *20570330* 20570350 *20570440* 20570480  20575900 *20576000* 20576710
FIRSTLINK  --  DEFINE  --  DECLARED AT 40008130
       40049000  40078042
FIRSTLOC  --  INTEGER  --  DECLARED AT 37388100
       *37407000* 37416000
FIRSTORSEC  --  REAL  --  DECLARED AT 07006176
       *07108100* 07115500 *07119100*
FIRSTREC  --  REAL  --  DECLARED AT 04668700
       *04675650* 04676000  04676850  04683100  04687650  04687750
FIRSTREC10  --  REAL  --  DECLARED AT 04668700
       *04677150* 04683000
FIRSTWAIT  --  REAL  --  DECLARED AT 00279000
       02091000 *04016200* 04117000 *04119000* 04165000  04177000  48004000
FIX  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04425000
       04373800  04391200  04414800  04417400  04419800
FIX  --  SUBROUTINE  --  DECLARED AT 44079000
       44154200  44156000  44156100  44157000  44157100  44157200  44158000  44159000  44160000  44160050  44160400
       44160500  44162000  44162050  44162100  44163000  44163020  44163030  44163040  44164010  44164020  44164500
       44164600  44165700  44166000  44167000  44168000  44168200  44169000  44170000  44171000  44172000  44173000
       44175000  44176000  44177000  44178100  44179000  44179050  44179100
FIXANDWRITEHEADER  --  SUBROUTINE  --  DECLARED AT 06086100
       06099800
FIXARRAY  --  DEFINE  --  DECLARED AT 05780700
       05844110  05844930  05850120  05953070  05961400  05966600  06077500  06095100  06107200  06109400  06380140
       16827100
FIXCOLDHDR  --  SUBROUTINE  --  DECLARED AT 41316505
       41316595  41318250  41320255
FIXED  --  DEFINE  --  DECLARED AT 20247940
       20712000
FIXFIB  --  LABEL  --  DECLARED AT 39054000  --  OCCURS AT 39294000
       39148000  39234000  39259000
FIXMV  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06093700
       06092900
FJ  --  REAL  --  DECLARED AT 40007500
       *40283500* 40317400  40317600
```

```
FK  --  STREAM VARIABLE  --  DECLARED AT 04588450
        04588520
FL  --  STREAM VARIABLE  --  DECLARED AT 04588430
        04588510
FLAGBIT  --  LABEL  --  DECLARED AT 42511000  --  OCCURS AT 42520000
        42512000
FLAGGER  --  REAL  --  DECLARED AT 04554800
       *04568595**04569200**04647750* 04648050  04654200
FLAGTESTER  --  REAL  --  DECLARED AT 42513500
        42537050
FLOC  --  NAME  --  DECLARED AT 15064000
        15073000  15084000  15100000
FM  --  SUBROUTINE  --  DECLARED AT 12822000
        12830500  12849000  12862500  12866500
FMS  --  DEFINE  --  DECLARED AT 00452400
        06463220  06463230  12619000  12636500  12899000  14015220  18027000  18770700  36006000  37046680  37215000
        37224000  37240200  37285310  37424200  38045120  38105700  38151000  38203700  38296750  38455000  38463000
        39143000
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
        00374000  00375000
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00377000
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
        00454000  00454100
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
        17000000  17000200  17003250
FN  --  STREAM VARIABLE  --  DECLARED AT 20061000
        20061500
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37214000  37218300  37242200  37242300  37248000  37255000
FN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37271000
        37274000  37275000  37276000  37278200  37281000  37283000  37284000  37284130  37284150  37285100  37285200
        37285300  37285320
FNUM  --  REAL  --  DECLARED AT 04668500
       *04674150* 04680050  04681250  04681850  04682050  04684700
FNUM  --  INTEGER  --  DECLARED AT 38003000
        38013030  38013040  38013900  38015700  38015900  38039000  38075000
FNUM  --  INTEGER  --  DECLARED AT 38102300
        38104800  38105600  38106100  38113500  38114500
FNUM  --  INTEGER  --  DECLARED AT 38200300
        38202800  38203600  38204100  38213000  38214500  38216500  38232500  38235500  38236010
FNUM  --  INTEGER  --  DECLARED AT 38361000
        38401000  38411500  38412200  38422000  38453000  38461000
FNUM  --  INTEGER  --  DECLARED AT 38546000
        38603000
FNUM  --  INTEGER  --  DECLARED AT 38654000
FNUM  --  INTEGER  --  DECLARED AT 39002000
       *39084000* 39085000  39086000  39087500  39089000  39091000  39092170  39092175  39238000  39242000  39293300
        39297020  39297100  39306010
FNUM  --  INTEGER  --  DECLARED AT 41002000
       *41042000* 41046000  41048000  41144000  41212000
FNUM  --  REAL  --  DECLARED AT 41312300
       *41313900* 41314300 *41314500* 41314600  41314700
FOG  --  LABEL  --  DECLARED AT 22236100  --  OCCURS AT 22350000
        22303200  22334400
FORGET  --  LABEL  --  DECLARED AT 06462200  --  OCCURS AT 06464400
        06465600  06465900
FORGET  --  LABEL  --  DECLARED AT 16053000  --  OCCURS AT 16343400
```

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        16109000  16127000  16161000  16166000  16172000  16200000  16242000  16244000  16259000  16263700
FORGET  -- LABEL  -- DECLARED AT 16354000  -- OCCURS AT 16689000
        16524000  16580000  16589000  16605000  16608000  16610900
FORGET  -- LABEL  -- DECLARED AT 16699000  -- OCCURS AT 16902500
        16740000  16769000  16773000  16779500  16785500  16787000  16788500  16792000  16795500  16830200  16866530
FORGET  -- LABEL  -- DECLARED AT 16914000  -- OCCURS AT 16966500
        16931000
FORGET  -- LABEL  -- DECLARED AT 37505000  -- OCCURS AT 37539000
        37521300
FORGET  -- LABEL  -- DECLARED AT 40005230  -- OCCURS AT 40101510
        40100300
FORGETEM  -- SUBROUTINE  -- DECLARED AT 09616000
        09625000  09636000
FORGETESPDISK  -- PROCEDURE  -- DECLARED AT 06020500  -- FORWARD AT 00364000
FORGETESPDISK  -- PROCEDURE  -- DECLARED AT 06036000
        06261000  07559120  14399000  14399500  14411740  20022300  20045800  20046300  20059600  20090200  20180800
        20572700  20573100  28012150  28410000  28813000  38459000  40353160
FORGETEVERYTHING  -- SUBROUTINE  -- DECLARED AT 08116200
        08116450  08117150
FORGETIT  -- SUBROUTINE  -- DECLARED AT 07026100
        07026800  07229000  07231000
FORGETONE  -- SUBROUTINE  -- DECLARED AT 07022100
        07026200  07026600
FORGETSPACE  -- PROCEDURE  -- DECLARED AT 24000000  -- FORWARD AT 00090000
        01261400  02049000  02124500  02173380  02173389  02253050  02271000  02313600  02317000  02434830  02434840
        02434850  04195100  04687750  04687800  05729000  05846390  05853595  05953220  05966100  05966400  05975620
        05977850  06084600  06095300  06114400  06114900  06115600  06244000  06328100  06329000  06353540  06353555
        06365110  06380140  06380950  06381085  06417000  06463720  06464400  06466620  07079000  07083000  07093000
        07235000  07236000  07238000  07239000  07240000  07264200  07290650  07295240  07318010  07332000  07373000
        07374200  07417000  07419400  07420050  07452700  07461800  07480000  07567000  08055000  08116350  08116400
        08259525  08270600  08276510  08297300  08298200  08387000  08434600  08438440  08572400  08597840  08621600
        08674000  08676000  08695400  08696000  08714170  08716500  08784100  08835000  08947000  08947600  08998000
        09505750  09536000  09621000  09624100  09634000  09634100  09643000  09648800  09658000  09681540  09681545
        09681650  09682000  09682700  12321170  12474500  12475000  12561600  12630500  12704000  12757000  12898000
        14292140  14364700  14372000  14396100  14399700  14411700  14431000  14621000  15552800  15604800  15627000
        16043550  16236000  16503000  16769000  16810500  16811000  16815500  16819400  16829550  18019000  18078000
        18465000  18466200  18527100  18541100  18555200  18790500  18800200  18800300  19575000  19685070  19700500
        19709000  19714100  19766800  19786000  19904850  20034060  20034200  20034600  20045400  20045600  20066500
        20120800  20176030  20176141  20210400  20210500  20210700  20289380  20289590  20382580  20511340  20511350
        20567030  20570070  20573350  20574905  20574920  20575650  20576215  20576300  20576450  20577725  20577823
        20577829  20578200  20578210  20578400  20580302  20585380  20585385  20588010  20588450  20592725  20601200
        20608050  20610200  20610300  20610350  20610420  20739000  20769600  22050000  22069450  22225000  22350000
        22383100  22386400  22403000  22428000  22921000  24031000  24035900  28051200  28062400  28286800  28295600
        28302000  28420600  28429800  28482000  28482200  28482600  28823500  28868200  28868400  28882140  28888000
        30929500  32000600  32001575  37232500  37254000  37263000  37279000  37463000  37545000  38014900  38228000
        38408000  38478000  38516000  38525000  38610600  38630000  39970000  40075000  40076000  40317230  40317700
        40317800  40323700  40335000  40353200  40356550  41199000  41209000  41323550  41334600  41335000  41607500
        42478600  42500000  42539050  44139000  44240660  44242010  44244500  44246500  44248500  44252000  44272000
        44281000  45092360  45099600  45134000  45135010  45135800  45143000
FORGETUSERDISK  -- PROCEDURE  -- DECLARED AT 05846600  -- FORWARD AT 00316000
        05853700  05977050  05977100  07025000  07178300  07345000  14360900  14406000  14583200  18425600  18446000
        19592000  20210600  28295400  28300600  37516000  37542000  38480000  38523000  38599000
FORKED  -- DEFINE  -- DECLARED AT 28007600
        28013800
FORKED  -- DEFINE  -- DECLARED AT 28208600
        28247800  28305000
FORKED  -- DEFINE  -- DECLARED AT 28405200
```

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        28454800
FORKED  --  REAL  --  DECLARED AT 41316400
       *41317200**41318620* 41318810  41320255  41325600
FORM  --  DEFINE  --  DECLARED AT 20240000
        20448050  20450000
FORMESS  --  REAL PROCEDURE  --  DECLARED AT 08418000
       *08420000**08438300* 16244000
FORMS  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
        00371000  00372000
FORMS  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
        37000000  37001000  37046730  37046740  37046825  37046960  37047800
FORMS  --  INTEGER  --  DECLARED AT 38004000
       *38075500* 38082500 *38091000* 38094000  38097000  38098000
FORMS  --  INTEGER  --  DECLARED AT 38102400
FORMS  --  INTEGER  --  DECLARED AT 38200400
        38215500  38252500
FORMS  --  REAL  --  DECLARED AT 38362000
       *38421000* 38489000  38505000
FORMS  --  REAL  --  DECLARED AT 38547000
FORMS  --  REAL  --  DECLARED AT 38655000
        38737000  38743000
FORMS  --  INTEGER  --  DECLARED AT 39003000
       *39089000* 39092170
FORMS  --  REAL  --  DECLARED AT 41003000
       *41048000*
FORMTIME  --  PROCEDURE  --  DECLARED AT 05607000  --  FORWARD AT 00480010
        02173297
FORMTOG  --  REAL  --  DECLARED AT 12505500
        12700500  12753000  12757500
FORMTOG  --  REAL  --  DECLARED AT 12805500
       *12849000* 12860500 *12878000*
FORMTOG  --  REAL  --  DECLARED AT 13007000
FORSEVEN  --  STREAM VARIABLE  --  DECLARED AT 04658700
        04660100 *04660800*
FORTRAN  --  DEFINE  --  DECLARED AT 20235000
FORTY  --  REAL  --  DECLARED AT 40004500
        40016026  40016910  40017285  40017295  40039100  40040500  40078068  40100700  40100900  40101250 *40249105*
       *40261043**40261047**40290500* 40290600 *40292060**40321310* 40322000  40322150  40324102 *40334054*
FORTYMILLDISK  --  DEFINE  --  DECLARED AT 40008200
        40261010  40261200  40290400  40321310  40324200  40327000
FOUND  --  LABEL  --  DECLARED AT 02189000  --  OCCURS AT 02217000
FOUND  --  LABEL  --  DECLARED AT 04705000  --  OCCURS AT 04736000
        04732000
FOUND  --  LABEL  --  DECLARED AT 05952620  --  OCCURS AT 05976900
        05976450
FOUND  --  LABEL  --  DECLARED AT 06462120  --  OCCURS AT 06463600
        06463580
FOUND  --  LABEL  --  DECLARED AT 08255800  --  OCCURS AT 08270600
        08270300
FOUND  --  LABEL  --  DECLARED AT 14547000  --  OCCURS AT 14599000
        14594000
FOUND  --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18232000
        18228000
FOUND  --  STREAM LABEL  --  DECLARED AT 28411400  --  OCCURS AT 28413400
        28412400
FOUNDAFILE  --  REAL  --  DECLARED AT 08100250
        08115250 *08117000* 08117100
FPB  --  REAL ARRAY  --  DECLARED AT 04668800
```

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        *04680100* 04681250  04681850 *04682050*
FPB  --  REAL ARRAY  --  DECLARED AT 06462110
        *06463520* 06463560  06463580 *06463660**06463680*
FPB  --  REAL ARRAY  --  DECLARED AT 07010000
        *07018000**07019000**07073500**07076010**07093010**07104500*
FPB  --  REAL ARRAY  --  DECLARED AT 12502500
        *12536500**12539500**12540000**12675750* 12700000  12700500 *12702500**12703000**12750250*
FPB  --  REAL ARRAY  --  DECLARED AT 12802500
        *12876500*
FPB  --  REAL ARRAY  --  DECLARED AT 13003000
FPB  --  REAL ARRAY  --  DECLARED AT 14624600
        *14644000* 14645600 *14677000* 14679000 *14684000* 14685000  14688000 *14705000* 14707000
FPB  --  REAL ARRAY  --  DECLARED AT 18502400
        *18523800* 18524100  18525700  18526800 *18552800* 18553100  18553200  18555700  18555800
FPB  --  REAL ARRAY  --  DECLARED AT 19521000
FPB  --  REAL  --  DECLARED AT 20017600
        *20049000* 20049500  20050000  20053200  20061100  20066500
FPB  --  STREAM VARIABLE  --  DECLARED AT 20053200
        20053400
FPB  --  STREAM VARIABLE  --  DECLARED AT 20061100
        20061400
FPB  --  REAL ARRAY  --  DECLARED AT 37180400
        *37242100**37242200**37242300*
FPB  --  REAL ARRAY  --  DECLARED AT 37272000
        *37273000* 37274000  37275000  37276000  37276100  37278000  37278200  37279000 *37280000**37281000**37283000*
        *37284000* 37284130 *37284150* 37285100 *37285200**37285300* 37285320
FPB  --  REAL ARRAY  --  DECLARED AT 38008000
        *38013030**38013040**38013900**38015700**38015950* 38075000
FPB  --  REAL ARRAY  --  DECLARED AT 38102800
        38104800 *38115000*
FPB  --  REAL ARRAY  --  DECLARED AT 38200800
        38202800  38213000  38214500 *38216500**38233000**38236000**38236010*
FPB  --  REAL ARRAY  --  DECLARED AT 38357000
        38401000  38411500  38412200  38422000  38453000  38461000
FPB  --  REAL ARRAY  --  DECLARED AT 38542000
        38603000
FPB  --  REAL ARRAY  --  DECLARED AT 38650000
FPB  --  REAL ARRAY  --  DECLARED AT 39005000
       *39083000* 39085000  39086000  39087500  39089000  39091000 *39092170* 39092175 *39297010**39297020* 39297100
       *39306010*
FPB  --  REAL ARRAY  --  DECLARED AT 41001000
       *41040000* 41046000  41048000  41144000
FPBAREAV  --  DEFINE  --  DECLARED AT 00017560
        20049000  20049800  20187400  28050800
FPBPTR  --  REAL  --  DECLARED AT 28001800
        28014200  28028000  28037400 *28050400* 28050600  28050800  28051000  28051600  28052400  28052800  28053600
       *28068600*
FPBPTR  --  REAL  --  DECLARED AT 28202200
        28226400 *28246200* 28247400 *28248200**28250400* 28250600  28251200  28305200  28305400
FPBPTR  --  REAL  --  DECLARED AT 28401000
        28434200  28481600
FPBSIZE  --  REAL  --  DECLARED AT 06462105
       *06463520* 06463540
FPBVERSION  --  REAL  --  DECLARED AT 20016800
        20016900 *20053100* 20053200  20061100  20064000
FPB3  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
        00390000  00390100
```

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FPB3  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37286200
        37286000  37286100  37293220  37293240
FR  --  STREAM VARIABLE  --  DECLARED AT 08838000
FREE  --  STREAM LABEL  --  DECLARED AT 08110550  --  OCCURS AT 08111200
FREE  --  DEFINE  --  DECLARED AT 20219200
        20511660  20511664
FREEF  --  DEFINE  --  DECLARED AT 20247930
        20448050  20461050  20461650  20467100  20473100
FREEF  --  REAL  --  DECLARED AT 37004200
       *37046005* 37046370
FREEL  --  LABEL  --  DECLARED AT 37004200  --  OCCURS AT 37046460
        37046420
FREEMASK  --  DEFINE  --  DECLARED AT 00081300
        09630000
FREES  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606250
        20597900
FROG  --  STREAM LABEL  --  DECLARED AT 04662100  --  OCCURS AT 04662300
FROM  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 01250200
        01250100  01250200  01254900  01255800  01257300
FROM  --  DEFINE  --  DECLARED AT 20238000
        20570400
FROMCOPY  --  DEFINE  --  DECLARED AT 28008200
        28012000  28049600
FROMHLD  --  REAL  --  DECLARED AT 20566290
        20566300  20566810 *20569522**20569850**20569860**20570460**20570464* 20570570
FRONT  --  REAL  --  DECLARED AT 22230000
        22264000  22268000  22273000  22278000  22284300  22284500  22286070  22286110 *22296000* 22307000  22309000
        22314000  22328400  22331400  22350000  22354000  22356300  22363000  22365300  22383100  22386400  22391000
        22403000  22410000  22428000
FRONT  --  REAL  --  DECLARED AT 24004000
       *24007000* 24011000
FS  --  REAL ARRAY  --  DECLARED AT 00419400
        04105650 *38039000* 44162050
FSAREAV  --  DEFINE  --  DECLARED AT 00017480
        20181000
FSROW  --  REAL ARRAY  --  DECLARED AT 00419400
       *20181000*
FSX  --  REAL  --  DECLARED AT 04100000
       *04105650* 04105750
FT  --  REAL  --  DECLARED AT 20016900
        20017000  20061000 *20063700**20063800* 20063900
FT  --  STREAM VARIABLE  --  DECLARED AT 20061000
        20061800
FT  --  REAL  --  DECLARED AT 20704100
       *20714500* 20769000
FTC  --  DEFINE  --  DECLARED AT 00067070
        02275450  14358800  14360350  22427000  38266000  38571000
FTF  --  DEFINE  --  DECLARED AT 00067060
        02067000  02097400  04201000  14218088  17002600  22383050  22424000  28470000  28474000  38107100  38205100
FT1  --  REAL  --  DECLARED AT 20017800
       *20063700*
FUNC  --  SWITCH LABEL  --  DECLARED AT 20511170
        20511450
FUNCJ  --  LABEL  --  DECLARED AT 20511165  --  OCCURS AT 20511455
        20511170
FUNCTION  --  SWITCH LABEL  --  DECLARED AT 14631000
        14634000
```

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FUNC0  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511460
       20511170
FUNC1  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511510
       20511170
FUNC2  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511540
       20511170
FUNC3  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511570
       20511170
FWD  --  STREAM LABEL  --  DECLARED AT 37394400  --  OCCURS AT 37394500
FXTOG  --  REAL  --  DECLARED AT 20702000
       20702100 *20712000**20714500* 20729000  20745000  20767000
F1  --  STREAM VARIABLE  --  DECLARED AT 12410500
       12412000
F2  --  STREAM VARIABLE  --  DECLARED AT 12410500
       12412000
G  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05846395
       05843600  05844000
G  --  INTEGER  --  DECLARED AT 05847700
       *05848255* 05848300 *05850200* 05851220  05851300  05852200  05852400  05852500
G  --  INTEGER  --  DECLARED AT 05952000
       *05961800* 05971200  05971600 *05971800* 05972000 *05972400*
G  --  LABEL  --  DECLARED AT 07270000  --  OCCURS AT 07275000
G  --  REAL  --  DECLARED AT 08441000
       *08497000* 08497100
G  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 15169100
       15168000  15168100  15172500  15175000 *15176000**15177000*
G  --  STREAM VARIABLE  --  DECLARED AT 15404000
       15406100
GET  --  REAL SUBROUTINE  --  DECLARED AT 13033000
       13090000  13097000  13118000
GETAROW  --  LABEL  --  DECLARED AT 18205000  --  OCCURS AT 18421000
       18288000
GETASEGMENT  --  SUBROUTINE  --  DECLARED AT 28409200
       28455800  28459800  28462600  28481000
GETASEGMENT  --  SUBROUTINE  --  DECLARED AT 28809000
       28824250  28859000  28868000
GETBUFFERS  --  DEFINE  --  DECLARED AT 00387000
       38025000  38152000  38297500  39144000  39230000  39244000  39293400
GETEM  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20569920
       20570250
GETESPDISK  --  REAL PROCEDURE  --  DECLARED AT 06021000  --  FORWARD AT 02111000
      *06031000* 06249000  07179230  07263800  08276490  19685020  19737000  19768700  19777000  20034500  20400000
       20403000  20566685  20569400  20576100  20576758  20581950  20582500  20585550  20603200  22069430  38495000
       40008330  44269500  44271000
GETFILESPECIFIER  --  SUBROUTINE  --  DECLARED AT 08101800
       08102800  08116600
GETFROMFRONT  --  FIELD  --  DECLARED AT 24042595
GETMOREOLAYDISK  --  PROCEDURE  --  DECLARED AT 06400000
       24167000
GETNEXT  --  SUBROUTINE  --  DECLARED AT 08858000
       08870000  08885000  08910000  08927000
GETONF  --  LABEL  --  DECLARED AT 28806000  --  OCCURS AT 28862000
       28868100
GETOUT  --  LABEL  --  DECLARED AT 14003000  --  OCCURS AT 14072000
       14051000  14074000
GETREADY  --  SUBROUTINE  --  DECLARED AT 08101400
       08101700  08116550
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GETSET  --  SUBROUTINE  --  DECLARED AT 08104400
        08104650  08116700
GETSPACE  --  INTEGER PROCEDURE  --  DECLARED AT 24042200  --  FORWARD AT 00014000
        00039035  01250700  02173110  02181000  02206000  02218000  02255000  02347320  02434320  02434430  02639000
        04004170  04251100  04272000  04278200  04359600  04365400  04371930  04401000  04555250  04567320  04567790
        04568550  04644000  04672500  04672950  04674750  04675000  04675650  04675700  04683500  04686100  04686950
        04707000  05703000  05709000  05844110  05844930  05850120  05952995  05953070  05961400  05966600  06022300
        06037300  06074200  06077500  06090000  06095100  06103900  06107200  06107300  06109400  06188100  06195125
        06206140  06210000  06211100  06353545  06353600  06353680  06360600  06380140  06380350  06380400  06414000
        06463880  06464000  07087000  07095100  07096000  07097000  07101000  07139530  07155000  07214000  07256400
        07257400  07274000  07304000  07371200  07429100  07433000  07446000  07564000  08104600  08112000  08115300
        08267500  08274250  08275500  08276410  08380000  08385100  08410000  08424000  08437200  08438400  08498000
        08568600  08577700  08597800  08604000  08605000  08629000  08631000  08690000  08693200  08709800  08712100
        08715100  08775000  08831000  08881000  08886000  08930000  09505000  09506000  09535000  09639000  09680200
        12321100  12407000  12408000  12468000  12473210  12672500  12708250  12823000  12833000  12848500  12892500
        14203020  14281000  14353000  14380000  14398600  14411640  14411820  14415300  14431530  14533000  14559250
        14570100  14603750  14645800  15022000  15113800  15115700  15174000  15180000  15501200  15546000  15549000
        15600800  15604250  15614000  15622000  16041100  16506000  16591000  16756000  16827100  16828300  16919500
        16926210  16956040  17002600  17003450  17909000  18013000  18014000  18048000  18273040  18276000  18280000
        18286000  18438120  18520600  18528200  18570100  18790100  18790600  18791620  18820200  18830600  18870700
        19680200  19685025  19705000  19711100  19719000  19731000  19768768  20021920  20026600  20028300  20049000
        20049800  20059120  20089820  20101300  20106000  20124900  20127300  20153700  20157700  20176048  20176090
        20181000  20187400  20194300  20289148  20374415  20382058  20511370  20567005  20567020  20592400  20600400
        20600950  20601500  20601720  20601850  20607060  22008000  22012000  22069000  22069050  22069100  22069350
        22163000  22904000  22909000  24042675 *24045500* 24046200  28018000  28023800  28050800  28056400  28058600
        28062000  28065000  28069000  28069600  28069800  28070000  28213400  28218400  28263400  28267400  28288000
        28291000  28304510  28429000  28432400  28435000  28443200  28451800  28452600  28455400  28457000  28459000
        28466600  28855000  28856000  28868300  28869000  30907000  30915000  32000300  32000500  32100500  37036300
        37046180  37046520  37240700  37249000  37277000  37314200  37360000  37406000  37440000  37454000  37508000
        38107000  38205000  38218000  38246500  38399000  38434000  38625000  39934000  39939000  39958000  40016240
        40016400  40249100  40249120  40263000  40265000  40275200  40275500  40278150  40292212  40320200  41312700
        41314000  41317790  41318210  41320600  41323130  41328600  41333010  41602900  44149000  44150005  44152000
        44202120  44202500  44203200  44240840  44241000  44256100  44262500  44274500  45075600  45101000  45130000
        45131100  45135040  45135110  45135170  45155000  48054400
GETUSERDISK  --  DEFINE  --  DECLARED AT 00012001
        05954800  06420000  07045000  08569700  08714130  08716010  18425100  18425300  19736000  20289150  28435800
        41318240  41320500  41321200  41502100  45092130
GETUSERDISK  --  DEFINE  --  DECLARED AT 05841700
        05843600  05845500  05846500
GI  --  REAL ARRAY  --  DECLARED AT 44017000
GI  --  REAL ARRAY  --  DECLARED AT 44207150
       *44256100* 44256150  44260000 *44269500*
GI  --  REAL ARRAY  --  DECLARED AT 45002700
        45103000  45105000  45114000  45115000  45118000  45121000  45122000  45123000  45124000  45125000  45126000
        45134000
GIMEDATE  --  PROCEDURE  --  DECLARED AT 08317000  --  FORWARD AT 08070000
        08108200  08385000  16494000  20105350  45075600
GIN  --  LABEL  --  DECLARED AT 14627300
GIVEDATE  --  DEFINE  --  DECLARED AT 00409000
        45135100
GIVETIME  --  DEFINE  --  DECLARED AT 00410000
        45135160
GIVEUP  --  LABEL  --  DECLARED AT 04554200  --  OCCURS AT 04642900
        04568600  04627000
GIVEUP  --  LABEL  --  DECLARED AT 07356000  --  OCCURS AT 07371450
GM  --  STREAM VARIABLE  --  DECLARED AT 04588300
        04588370
```

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GM  --  REAL  --  DECLARED AT 14164200
GNX  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08869000
        08862000
GOGO  --  LABEL  --  DECLARED AT 20316000  --  OCCURS AT 20321000
        20374500
GOGOGO  --  LABEL  --  DECLARED AT 00008000  --  OCCURS AT 48024000
        48044000
GOT  --  REAL  --  DECLARED AT 31005000
        31005310  31005330 *31010000* 31012000
GOT  --  STREAM VARIABLE  --  DECLARED AT 31005310
GOTB  --  INTEGER  --  DECLARED AT 37003000
        37021000 *37045000* 37046820  37046940
GOTC  --  INTEGER  --  DECLARED AT 37003000
       *37019300* 37021000  37039000  37046820  37046950
GOTIT  --  LABEL  --  DECLARED AT 13019000  --  OCCURS AT 13119100
        13099000
GOTL  --  INTEGER  --  DECLARED AT 37003000
       *37012000* 37021000  37039000  37046820 *37047500*
GOTP  --  INTEGER  --  DECLARED AT 37003000
       *37017000**37047500*
GOTT  --  INTEGER  --  DECLARED AT 37003000
       *37035000* 37046820  37046940
GOTTEN  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13090000
        13085000
GRABIT  --  LABEL  --  DECLARED AT 14627400
GUARDFILEFID  --  DEFINE  --  DECLARED AT 08101100
        08110150  08110350
GUARDFILEMFID  --  DEFINE  --  DECLARED AT 08101050
        08110100  08110250  08110350
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 00390200
        00390000  00390100
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02347160
        02347150  02347160
H  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02696100
        02696000
H  --  INTEGER  --  DECLARED AT 05841615
       *05842930* 05843700 *05845100* 05845300  05845500  05845700
H  --  INTEGER  --  DECLARED AT 05847700
       *05850300**05850400**05850600**05851500**05851850* 05852000  05852700
H  --  INTEGER  --  DECLARED AT 05952000
        05953085 *05962000**05962200**05962600* 05962700  05962900  05970800  05972800  05973400  05973800 *05974400*
       *05974600* 05974800
H  --  STREAM VARIABLE  --  DECLARED AT 05953085
        05953105  05953110
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 07002100
H  --  REAL ARRAY  --  DECLARED AT 07010000
        07023000  07025000  07026400  07026500  07043000 *07044000**07045000**07097000**07111000* 07112000 *07112100*
       *07178200**07179000**07179050**07179100**07179200**07179220* 07179250  07179260  07180000  07238000
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 07377000
        07376000  07377000  07389000  07390000  07393000  07395000 *07396000**07397000**07399000**07400400* 07401000
       *07403000**07404000*
H  --  REAL ARRAY  --  DECLARED AT 07407000
       *07409000* 07410000  07410100  07412000  07416000  07417000  07420010  07420050
H  --  REAL ARRAY  --  DECLARED AT 07425000
       *07433000**07434000* 07436200  07436300  07436500  07437800 *07438100**07441000**07442000* 07444000 *07445000*
        07445100  07445200  07445300  07446100  07446150 *07446200* 07448500  07451000
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 07541000
```

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        07545000 *07548000**07548100* 07549000 *07550000**07550100**07557000* 07559000  07559110  07559180 *07559500*
H  --  INTEGER  --  DECLARED AT 08306000
       *08309000* 08310000
H  --  STREAM VARIABLE  --  DECLARED AT 08310000
        08312000
H  --  REAL  --  DECLARED AT 08418500
       *08434000**08434100**08434200* 08434300  08434500  08434600  08434700 *08531000* 08532000
H  --  REAL  --  DECLARED AT 08704000
       *08709800**08712100* 08712110  08712120  08712130  08712140  08712150  08712160  08712170  08713250  08714110
        08714120  08714130  08714150  08714170 *08715100* 08715200  08716100  08716110  08716200  08716300  08716500
        08728500  08728700
H  --  STREAM VARIABLE  --  DECLARED AT 08709800
H  --  STREAM VARIABLE  --  DECLARED AT 08713250
H  --  REAL  --  DECLARED AT 14545100
       *14552750**14569200* 14569500  14570000  14581700
H  --  REAL ARRAY  --  DECLARED AT 18502400  --  OCCURS AT 15032000
       *18524500**18524700**18524900**18525300* 18525500 *18525900**18526300**18526500* 18526700  18527000  18527100
        18527400  18527500 *18527600**18528100* 18528200
H  --  REAL ARRAY  --  DECLARED AT 19521000
       *19685025**19685030**19685055* 19685065  19685070 *19685570**19685580**19685585*
H  --  REAL ARRAY  --  DECLARED AT 19692000
       *19731000* 19732000 *19733000**19735000**19735050**19736000* 19738000  19751000  19754000  19766300  19768200
       *19768600**19768650* 19768750  19768768  19779000 *19780000* 19781000  19786000
H  --  REAL ARRAY  --  DECLARED AT 28004400
        28044800 *28070000* 28091800 *28099800* 28100200
H  --  REAL ARRAY  --  DECLARED AT 28204800
        28240000  28240200  28254000 *28255800* 28257400  28258400  28258800  28259000  28273400  28276600  28277600
        28278600  28279400  28283200  28286400 *28289200* 28290000  28290200 *28290400**28290600* 28291200  28295000
        28295400  28297800 *28298600* 28298800 *28299000* 28299600  28299800  28300200  28301600
H  --  STREAM VARIABLE  --  DECLARED AT 28291200
        28292400
H  --  REAL ARRAY  --  DECLARED AT 28804000
       *28822000**28822500* 28823500  28836000  28836500 *28881000* 28882140 *28882200* 28884000  28885000 *28886000*
        28888000
H  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 37286300
        37286000  37286100  37289000  37290000  37291000  37292600  37292800 *37293270* 37294000
H  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 37500000
        37510000  37511000  37512000  37513000  37515000  37516000 *37517000* 37521000 *37521200**37531000* 37533000
        37535000 *37538500* 37542000  37543000 *37544000*
H  --  STREAM VARIABLE  --  DECLARED AT 38014200
        38014300
H  --  STREAM VARIABLE  --  DECLARED AT 38422000
        38423000
H  --  REAL  --  DECLARED AT 40007500
       *40280100* 40283600  40293070  40317500  40317610
HA  --  LABEL  --  DECLARED AT 00650750  --  OCCURS AT 00655200
        00655800  00656400
HA  --  REAL  --  DECLARED AT 05952240
       *05976000* 05976800  05977000  05977550
HADDR  --  REAL  --  DECLARED AT 19694000
       *19737000* 19738000  19767800 *19777000* 19780000  19782000  19783000  19785000
HALT  --  PROCEDURE  --  DECLARED AT 02036000
        02257000  02363000  02434480  04674500  06103800  14358383  16125000  16850900  18581400  19905320  22011000
        22244000  42501500
HALTED  --  REAL  --  DECLARED AT 16698230
       *16850900* 16856200
HALTSET  --  DEFINE  --  DECLARED AT 00416751
```

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        00656600  44182200
HANDLERR  --  LABEL  --  DECLARED AT 28211000  --  OCCURS AT 28245400
        28242800  28243800
HANG  --  DEFINE  --  DECLARED AT 00006100
HARDFILL  --  SUBROUTINE  --  DECLARED AT 01253800
        01254700  01256900  01258000  01259200  01259700
HB  --  LABEL  --  DECLARED AT 00650750  --  OCCURS AT 00655600
        00656200
HD  --  REAL ARRAY  --  DECLARED AT 05951600
        05951700  05952400 *05953070* 05953075 *05953080* 05953085 *05953117**05953120**05953125*
HD  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16823000
        16705000
HDR  --  REAL ARRAY  --  DECLARED AT 05952260
       *05976050* 05976150  05976300  05976350 *05976950* 05977350  05977400 *05977500*
HDR  --  REAL  --  DECLARED AT 07244000
       *07256000* 07257600  07257800  07262200
HDR  --  REAL ARRAY  --  DECLARED AT 08100000
       *08104600* 08105350  08105400  08105500  08105700  08105900  08106040  08107100  08109100  08109250  08109300
        08110050  08110100  08110150  08110250  08110350  08112050  08112150  08112175  08113300  08114300  08114350
        08116350
HDR  --  REAL  --  DECLARED AT 08255400
       *08273750* 08274260  08275750  08276000  08276400
HDR  --  REAL  --  DECLARED AT 20012400
       *20028300* 20028900  20031500  20034000  20034060  20034200  20043800  20044800  20045400
HDR  --  REAL  --  DECLARED AT 20081600
HDR  --  REAL  --  DECLARED AT 20142000
       *20150200* 20169600  20169800  20169900  20174300  20176054
HDR  --  REAL  --  DECLARED AT 22061100
        22061110 *22069030* 22069110  22069120  22069340
HDR  --  REAL ARRAY  --  DECLARED AT 28205400
       *28289000**28289400**28289600* 28290400  28295200  28296000  28299200  28299800  28300400  28300600
HDR1CHK  --  SUBROUTINE  --  DECLARED AT 01251700
        01252400  01255300  01256200  01259000
HDR1FILL  --  SUBROUTINE  --  DECLARED AT 01252500
        01253700  01255400  01256300  01256800  01257900  01259100  01259600
HEAD  --  REAL ARRAY  --  DECLARED AT 40005050
       *40016510**40017050**40017200**40017250**40027295* 40041000  40046000 *40049000**40057000**40078042* 40078052
       *40078054**40078058*
HEADER  --  REAL  --  DECLARED AT 05952250
       *05975750* 05975850  05976000 *05976050* 05976800  05977000  05977550  05977850
HEADER  --  REAL  --  NAME PARAMETER  --  DECLARED AT 06460200
        06460000  06463200  06463840  06463860  06463880  06463925  06466610 *06466620*
HEADER  --  NAME  --  DECLARED AT 08703000
       *08706000**08707500* 08708000  08709000  08709400  08709500 *08711000* 08711600 *08712000* 08712100  08712120
       *08712200**08712500**08713000* 08713250 *08714120**08714130* 08714140  08714150  08714310  08714320  08715000
        08715100 *08716000* 08716100  08716110  08716200  08717000 *08721000*
HEADER  --  REAL ARRAY  --  DECLARED AT 12502500
        12503000  12561600 *12562000**12563000* 12564500  12565000  12627500  12630500 *12632000**12632500* 12633000
        12633500  12642000  12643500
HEADER  --  REAL ARRAY  --  DECLARED AT 12802500
        12803000
HEADER  --  REAL ARRAY  --  DECLARED AT 13003000
        13041000  13042000  13044000  13049000
HEADER  --  REAL ARRAY  --  DECLARED AT 14624400
HEADER  --  SUBROUTINE  --  DECLARED AT 18238000
        18270000  18287000  18426000
HEADER  --  REAL ARRAY  --  DECLARED AT 20289040
```

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       *20289055* 20289080 *20289105**20289110**20289113**20289115**20289120**20289125**20289130**20289135*
HEADER  --  REAL ARRAY  --  DECLARED AT 38010000
       *38014100* 38014200  38014400 *38020000* 38032000 *38035000* 38040000  38045110  38049400  38049500  38049600
        38075500  38076000  38091000
HEADER  --  REAL ARRAY  --  DECLARED AT 38103000
        38103200
HEADER  --  REAL ARRAY  --  DECLARED AT 38201000
        38201200 *38251000**38251500**38252000**38252500**38253000**38253100**38253500**38254000**38266000**38288500*
       *38289300* 38290000  38291000
HEADER  --  REAL ARRAY  --  DECLARED AT 38357000
       *38388000**38389600**38390000**38390300* 38401000 *38406500* 38411600 *38411800**38412200* 38421000  38422000
       *38424000* 38426000  38427000  38429000 *38430000* 38437000 *38453000* 38454000  38457000 *38461000* 38462000
        38465000  38467000  38468000  38472000  38473000 *38475000* 38476000  38479000  38480000  38481000 *38482000*
       *38486000**38489000**38490000**38491000**38492000* 38496000  38499000  38503400 *38503600**38505000* 38506000
        38507500  38508000  38518500  38523000  38525000
HEADER  --  REAL ARRAY  --  DECLARED AT 38542000
HEADER  --  REAL ARRAY  --  DECLARED AT 38650000
HEADER  --  REAL ARRAY  --  DECLARED AT 39056000
HEADER  --  REAL ARRAY  --  DECLARED AT 41001000
HEADERADDRESS  --  DEFINE  --  DECLARED AT 08101300
        08105350  08105400  08106040  08116350
HEADERUNLOCK  --  DEFINE  --  DECLARED AT 00430000
        05976800  16816500  20578425  20593950  20594650  28283600
HERE  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 00082000
        00083000  00087000
HEURISTIC  --  DEFINE  --  DECLARED AT 24114000
        24164000
HH  --  STREAM LABEL  --  DECLARED AT 15032000  --  OCCURS AT 15033000
HI  --  REAL  --  DECLARED AT 06068300
        06088100 *06088200* 06092800  06100800 *06111500*
HI  --  REAL  --  DECLARED AT 37180000
       *37187100**37187250* 37188500  37195200 *37195280**37195300**37195400**37195700**37212000* 37213000  37220000
        37232000  37232250
HICNT  --  REAL  --  DECLARED AT 06068800
       *06087000**06087300* 06087900  06088000  06088100  06088200  06088500  06089300  06089900  06090000
HIGHLINK  --  DEFINE  --  DECLARED AT 40008170
        40060302  40070000  40078030  40078042  40078048
HME  --  REAL  --  DECLARED AT 20566265
        20567055  20567095 *20569980* 20570000  20570120 *20573450* 20573510
HN1  --  REAL  --  DECLARED AT 16698000
       *16825500* 16825600 *16825800* 16826500 *16830100*
HN2  --  REAL  --  DECLARED AT 16698100
       *16825600**16825900* 16826500
HOLD  --  REAL  --  DECLARED AT 02349000
       *02355000* 02357000 *02357600* 02358000
HOLD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 18002000
        18000000  18001000  18008000  18047500  18075500
HOLD  --  SUBROUTINE  --  DECLARED AT 18252000
        18301000  18317000  18330000  18339000  18348000  18395000  18435000
HOLDCT  --  REAL  --  DECLARED AT 04668650
       *04677300* 04677400  04677650  04685650  04685750
HOLDER  --  REAL  --  DECLARED AT 00418850
        18012000  18015000 *18016000* 18018000  18046000  18049000 *18059000* 18071000 *44086100* 44086200
HOLDFREE  --  DEFINE  --  DECLARED AT 00080700
        08571000  41320310
HOLDLIST  --  REAL ARRAY  --  DECLARED AT 18005000
       *18014000* 18015000 *18017000* 18018000  18019000 *18048000* 18049000  18053000  18056000  18063000  18068000
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        18071000  18078000
HOLDMASK  --  DEFINE  --  DECLARED AT 00080700
        08378000  08379000  08388000  08571000  08571100  08571600  08627000  08628000  08677000  08689200  08689300
        08696100  08830000  08836000  41320310  41320320  41320355  45135220
HOLDMAX  --  DEFINE  --  DECLARED AT 00418900
        18012000  44086100
HOLD1  --  REAL  --  DECLARED AT 20566247
        20566250 *20573480**20573760* 20576600 *20577300* 20577325  20577450  20577600
HOLD2  --  REAL  --  DECLARED AT 20566250
        20566255 *20577300* 20577325  20577450  20577625
HOLD3  --  REAL  --  DECLARED AT 20566255
        20566260 *20569930* 20569935 *20569960* 20569965 *20569985**20569990* 20570090 *20574905* 20576215  20577325
HP  --  STREAM VARIABLE  --  DECLARED AT 07003640
        07003660  07003890
HPPTR  --  STREAM VARIABLE  --  DECLARED AT 07003640
       *07003680* 07003780
HP2MASK  --  DEFINE  --  DECLARED AT 00080100
        02043000  48085000  48098000
HP2TOG  --  DEFINE  --  DECLARED AT 00080100
HS  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16611000
        16366000
HU  --  DEFINE  --  DECLARED AT 00430100
        05976800  16816500  20578425  20593950  20594650  28283600
H1  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08418000
        08429000  08430000  08433000  08437100
H3  --  STREAM VARIABLE  --  DECLARED AT 20289080
        20289090  20289095
I  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
        00452600  00452700
I  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00650000
       *00651000* 00651800 *00652000* 00655200  00656200
I  --  STREAM VARIABLE  --  DECLARED AT 00651800
        00653200
I  --  REAL  --  DECLARED AT 02057000
       *02091000* 02092000 *02093000* 02094000
I  --  INTEGER  --  DECLARED AT 02193000
       *02197000* 02198000
I  --  INTEGER  --  DECLARED AT 02349000
       *02356500* 02357000  02357600 *02357700* 02358000
I  --  INTEGER  --  DECLARED AT 02434125
I  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02696500
I  --  INTEGER  --  NAME PARAMETER  --  DECLARED AT 02696700
I  --  REAL  --  DECLARED AT 04126000
       *04168000* 04170800 *04194700* 04195000  04237000
I  --  INTEGER  --  DECLARED AT 04551000
       *04568360* 04568366  04568370 *04653900* 04654000 *04658800* 04659200
I  --  INTEGER  --  DECLARED AT 04668450
       *04677250* 04677300 *04682650* 04682700  04682750
I  --  INTEGER  --  DECLARED AT 04703000
       *04722000**04726000**04728000* 04729000 *04733000* 04734000  04735000
I  --  INTEGER  --  DECLARED AT 05702000
       *05705000* 05706000  05707000 *05715000* 05716000 *05722000* 05724000  05728000 *05728140* 05728180 *05728220*
I  --  INTEGER  --  DECLARED AT 05841350
        05841615  05842700  05842900  05843000 *05843200**05844110**05844920* 05845000  05845100 *05845200**05845500*
        05845700
I  --  INTEGER  --  DECLARED AT 05847700
        05848255 *05849500* 05850120  05850130  05850200
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I  --  INTEGER  --  DECLARED AT 05951800
       *05961000* 05961400  05961600  05961600 *05967400* 05967600  05968200  05968600  05968900  05969200  05971800
       *05976300* 05976350  05976950 *05977050**05977100**05977350* 05977400  05977500
I  --  INTEGER  --  DECLARED AT 06069100
       *06085200**06087100* 06087200  06087300 *06088900* 06089000  06089100  06089300 *06091900* 06092100  06092500
        06093000  06093900  06094100 *06096700* 06096800  06097000  06097100  06097200  06097300  06099400  06099500
        06100100  06100200 *06100500**06101000* 06101100 *06109200* 06109500 *06110500* 06110700  06110800  06110900
        06111000  06111300  06111600  06111700  06111800 *06113400*
I  --  INTEGER  --  DECLARED AT 06184000
       *06213000* 06214000  06216000  06217000 *06218000* 06219000  06220000 *06221000* 06222000  06223000 *06224000*
        06225000  06226000 *06227000**06229000* 06231000  06232000 *06233000* 06233100  06234000  06235100  06236000
        06237000  06238000  06241100  06241200 *06242000* 06248000 *06252000* 06254000  06255000 *06256000**06266000*
        06267000
I  --  INTEGER  --  DECLARED AT 06403000
       *06414000* 06416000  06417500  06418000 *06420000* 06422000
I  --  REAL  --  DECLARED AT 06462105
       *06463540* 06463560  06463580  06463640  06463660  06463680
I  --  INTEGER  --  DECLARED AT 07008000
       *07147000**07151000*
I  --  REAL  --  DECLARED AT 07244000
       *07261600* 07261800
I  --  REAL  --  DECLARED AT 07269000
       *07274000* 07276000  07278000  07281000  07282000  07284000  07290000  07290650  07293000  07294000  07295030
        07295235  07295240
I  --  STREAM VARIABLE  --  DECLARED AT 07284000
I  --  STREAM VARIABLE  --  DECLARED AT 07293000
I  --  STREAM VARIABLE  --  DECLARED AT 07295030
I  --  REAL  --  DECLARED AT 07299000
       *07303000**07304000* 07305000  07311500  07312000  07313000  07315000  07318010  07330100  07332000 *07333000*
        07343000  07345000  07346000  07351000
I  --  STREAM VARIABLE  --  DECLARED AT 07305000
I  --  STREAM VARIABLE  --  DECLARED AT 07346000
I  --  INTEGER  --  DECLARED AT 07388000
       *07401000* 07401900  07402000
I  --  REAL  --  DECLARED AT 07408000
       *07411000* 07412000 *07417400* 07417500  07419100  07419300
I  --  REAL  --  DECLARED AT 07424000
       *07448500*
I  --  REAL  --  DECLARED AT 07458000
        07461000  07461900 *07462200* 07462300  07463000
I  --  STREAM VARIABLE  --  DECLARED AT 07463000
        07465000
I  --  INTEGER  --  DECLARED AT 07543000
       *07564000* 07565000  07566000  07567000
I  --  INTEGER  --  NAME PARAMETER  --  DECLARED AT 08001000
        08000000 *08008000* 08015100
I  --  REAL  --  DECLARED AT 08026000
        08029000  08039000  08047000  08048000
I  --  INTEGER  --  DECLARED AT 08081000
        08083000  08084000  08089000  08090000
I  --  INTEGER  --  DECLARED AT 08098900
       *08103150* 08103200  08103300  08108250 *08114050* 08114100  08114200  08114650
I  --  STREAM VARIABLE  --  DECLARED AT 08114650
       *08114800*
I  --  INTEGER  --  DECLARED AT 08255200
       *08269000* 08269100  08269200  08269300  08269530  08270000  08270200 *08276340* 08276350 *08276410* 08276480
        08276500  08276510
```

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I  --  STREAM VARIABLE  --  DECLARED AT 08276410
I  --  REAL  --  DECLARED AT 08283000
        08292000  08296225 *08296325* 08296350 *08296600**08296800* 08297200  08297300
I  --  STREAM VARIABLE  --  DECLARED AT 08296225
        08296250
I  --  REAL  --  DECLARED AT 08392000
I  --  INTEGER  --  DECLARED AT 08418700
       *08432000**08434000* 08435000  08436000  08437000 *08438400* 08438410  08438420  08438430  08438440
I  --  INTEGER  --  DECLARED AT 08568150
        08568200  08569900  08569910 *08569920**08571300* 08571400  08571800  08572600  08572700
I  --  STREAM VARIABLE  --  DECLARED AT 08572700
        08572800
I  --  REAL  --  DECLARED AT 08576000
       *08579000* 08583000  08584000  08584100 *08585000* 08587000 *08588000* 08590000
I  --  STREAM VARIABLE  --  DECLARED AT 08590000
I  --  INTEGER  --  DECLARED AT 08704100
       *08712000* 08712200  08714140  08714300 *08717000*
I  --  STREAM VARIABLE  --  DECLARED AT 08774000
        08777000  08778000
I  --  STREAM VARIABLE  --  DECLARED AT 08838000
       *08841000**08844000**08845000* 08845500
I  --  REAL  --  DECLARED AT 09601000
        09602100 *09606000* 09607000  09608000 *09611000**09641000* 09642000  09644000  09645000
I  --  REAL  --  DECLARED AT 14164300
        14186100 *14218076**14218078* 14218080 *14218084* 14218088  14227400
I  --  STREAM VARIABLE  --  DECLARED AT 14186100
I  --  STREAM VARIABLE  --  DECLARED AT 14227400
        14227520
I  --  REAL  --  DECLARED AT 14347000
        14349000  14351310  14351340  14351350  14351400  14351420 *14358394**14358395**14358397**14358398* 14358580
        14358595  14358597 *14358615* 14358620  14362000  14364500  14364700 *14364800**14385000* 14387000  14389000
        14392500  14394000  14395000 *14404000* 14405000  14406000 *14411000* 14415000
I  --  STREAM VARIABLE  --  DECLARED AT 14415000
        14419000 *14419500*
I  --  REAL  --  DECLARED AT 14532000
       *14534500* 14535000 *14540300**14541000* 14541100
I  --  REAL  --  DECLARED AT 14545000
       *14551000* 14551500  14552000  14552750  14554000 *14583100* 14583200 *14593000* 14594000 *14598500* 14600000
       *14601500* 14602500  14603000  14603110  14604000
I  --  REAL  --  DECLARED AT 14624550
       *14686000**14712300**14712750*
I  --  REAL  --  DECLARED AT 15171000
       *15184000* 15185000
I  --  STREAM VARIABLE  --  DECLARED AT 15404000
       *15409000**15417000*
I  --  REAL  --  DECLARED AT 15536000
       *15549000* 15550000  15552800
I  --  REAL  --  DECLARED AT 15612000
       *15620000**15621000* 15626000
I  --  REAL  --  DECLARED AT 16048000
       *16079000**16082000* 16083000  16085000 *16100000**16106000* 16107000  16108000 *16204000* 16205000  16215000
        16216000 *16224000* 16225000  16234000 *16237000* 16239000 *16244000* 16245000 *16263300* 16343100  16343200
I  --  REAL  --  DECLARED AT 16349000
       *16598000* 16599000
I  --  REAL  --  DECLARED AT 16695000
        16695500  16698200 *16742500**16743500**16744500**16745500* 16746500 *16782500* 16784500  16806500  16807500
        16809000  16810000  16811500  16815000  16815500  16816500  16817000  16818000 *16826500* 16826600  16828100
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          16828200
I  --   REAL  --  DECLARED AT 16910500
          16911000 *16926020* 16926022  16926040 *16926200* 16926210
I  --   STREAM VARIABLE  --  DECLARED AT 16926040
         *16926150* 16926152 *16926154*
I  --   STREAM VARIABLE  --  DECLARED AT 16926210
          16926230
I  --   STREAM VARIABLE  --  DECLARED AT 17003250
          17003500
I  --   REAL  --  DECLARED AT 18198000
         *18232000* 18241000  18248000 *18357100* 18357300 *18445000* 18446000
I  --   REAL  --  DECLARED AT 18502300
         *18503400**18520100* 18520600  18521000 *18523900* 18524100  18525700  18526800 *18552900* 18553100  18553200
          18555700  18555800 *18556200* 18556300  18559600
I  --   STREAM VARIABLE  --  DECLARED AT 18521000
          18521600 *18522000* 18522100
I  --   REAL  --  DECLARED AT 18701800
         *18710244* 18710246 *18710254* 18710258  18710260 *18710272* 18710274 *18720500* 18720600  18720700 *18740200*
          18741000 *18770100**18770300* 18770900 *18780200* 18780300  18780400 *18790600* 18791610 *18791620* 18791670
         *18800100**18800200**18820100**18820200* 18821600  18822100 *18840200**18840300**18840400* 18840600  18840700
         *18841600* 18841700 *18844400**18845200* 18845300
I  --   STREAM VARIABLE  --  DECLARED AT 18820200
I  --   REAL  --  DECLARED AT 19519000
I  --   REAL  --  DECLARED AT 19901500
         *19903960* 19903970 *19903980* 19903990 *19904060* 19904600
I  --   REAL  --  DECLARED AT 20011900
         *20030200* 20030760  20030800  20034000 *20035700* 20035900 *20039500* 20039600  20039700  20039800  20039900
          20043700 *20059500* 20060900 *20066200*
I  --   STREAM VARIABLE  --  DECLARED AT 20030800
          20032150
I  --   STREAM VARIABLE  --  DECLARED AT 20043700
          20044400
I  --   REAL  --  DECLARED AT 20081100
         *20091200* 20091300  20091400  20091600  20091700  20091800  20091900  20092000  20092300 *20092600* 20093400
          20093500  20093700 *20094000**20119000* 20119900  20120000 *20129400* 20129500  20129700
I  --   REAL  --  DECLARED AT 20141500
          20142950 *20170800* 20172800  20173200 *20175100* 20175300  20175400  20175500 *20194100* 20194300  20194400
I  --   INTEGER  --  DECLARED AT 20289040
         *20289260**20289350* 20289360  20289365
I  --   REAL  --  DECLARED AT 20319000
         *20324000**20327000**20362000* 20363000  20364000 *20365000**20366000**20372000**20374300**20374320**20374415*
          20374430 *20377000* 20381000
I  --   STREAM VARIABLE  --  DECLARED AT 20374415
I  --   REAL  --  DECLARED AT 20382050
         *20382068**20382150* 20382165  20382200  20382300  20382660  20382680  20382700
I  --   INTEGER  --  DECLARED AT 20566340
         *20567162* 20567166  20567170 *20567172* 20567176
I  --   REAL  --  DECLARED AT 22002000
         *22011300* 22011500  22011600 *22014400* 22014500  22014600  22014620  22014640 *22015000* 22017000  22018000
          22019000  22022000  22023500  22024000  22024500  22025000 *22032000* 22033000  22034000  22035000 *22041000*
          22042000  22043000  22044000 *22046000*
I  --   INTEGER  --  DECLARED AT 22060000
          22061000 *22069310* 22069320 *22069350* 22069420  22069440  22069450 *22075000* 22080000  22086000  22089000
          22092000 *22094000* 22101000  22102000  22109000  22185000  22209200
I  --   STREAM VARIABLE  --  DECLARED AT 22069350
I  --   REAL  --  DECLARED AT 28803000
         *28814000* 28865000  28866000 *28868000* 28868100
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I  --  REAL  --  DECLARED AT 31005000
       *31005300* 31005310 *31009000**31010000* 31011000
I  --  STREAM VARIABLE  --  DECLARED AT 31005310
        31005320
I  --  REAL  --  DECLARED AT 32100100
       *32100200* 32100300  32100350
I  --  INTEGER  --  DECLARED AT 37272000
       *37275000* 37276000 *37276100* 37277000  37278000  37278200  37280000 *37285100**37285200* 37285300  37285305
        37285320  37285400
I  --  INTEGER  --  DECLARED AT 37287250
       *37290000**37291000* 37292800  37293270 *37294000*
I  --  REAL  --  DECLARED AT 37303000
       *37305000* 37306000
I  --  REAL  --  DECLARED AT 37323000
       *37323300* 37326000 *37327000**37332000* 37333000 *37334000*
I  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
        37357300  37357400  37361000
I  --  STREAM VARIABLE  --  DECLARED AT 37361000
        37362000
I  --  INTEGER  --  DECLARED AT 37388000
       *37392000* 37394050 *37405000* 37406000  37416000
I  --  REAL  --  DECLARED AT 37507000
       *37514000* 37515000  37516000 *37532000* 37533000  37535000
I  --  INTEGER  --  DECLARED AT 38360000
       *38370800* 38371000  38372000  38374000 *38377800**38378000**38467000**38472000**38507800**38509000* 38511000
        38513000  38516000 *38522000* 38523000
I  --  INTEGER  --  DECLARED AT 38545000
       *38553000* 38554000  38555000  38557000 *38581910**38607100* 38608200  38608920  38609300  38610100 *38625000*
        38626000  38628000  38628100  38629000  38630000 *38631000*
I  --  STREAM VARIABLE  --  DECLARED AT 38626000
I  --  INTEGER  --  DECLARED AT 38653000
       *38666000* 38667000  38668000  38670000  38700000 *38701000* 38704000  38711000  38754000
I  --  STREAM VARIABLE  --  DECLARED AT 38711000
       *38716000*
I  --  REAL  --  DECLARED AT 39901000
        39905000 *39961000* 39962000 *39963000**39964000* 39965000  39966000 *39969000*
I  --  STREAM VARIABLE  --  DECLARED AT 39905000
        39921000
I  --  REAL  --  DECLARED AT 40004000
        40008340 *40253000* 40254100  40257000  40261010  40261044  40261048  40261049  40261100 *40261200**40279000*
        40280000  40280100  40281100 *40281200* 40283100  40283200  40283300  40283500  40285000  40285005  40285010
        40285020  40285135  40285160  40285600  40287000  40290200  40292212  40293010  40312000 *40317200* 40317210
        40317230 *40321300**40321400* 40322000  40322100  40322220  40323600  40323700
I  --  INTEGER  --  DECLARED AT 41002000
       *41049000* 41050000 *41051400**41051500**41197000* 41201000
I  --  INTEGER  --  DECLARED AT 41430300
       *41500500**41500700**41500800**41502000* 41502100  41502300
I  --  INTEGER  --  DECLARED AT 42475000
       *42477000**42478400**42478800* 42479000
I  --  INTEGER  --  DECLARED AT 42482000
       *42488000**42489000* 42505000  42506100  42506200  42506300 *42506400*
I  --  REAL  --  DECLARED AT 42514000
       *42525115* 42525120 *42525130* 42525150 *42531000* 42532000
I  --  REAL  --  DECLARED AT 44011000
        44037300  44037400  44080000  44081000 *44086300* 44087000  44087100 *44151000* 44152000  44154000 *44154100*
       *44155000**44163000**44163020**44163030**44163040**44164000**44164500**44165700**44166000**44166200**44167600*
       *44168100**44174000**44178100**44179000**44179050**44179100**44189550* 44189600  44189800 *44192000* 44193000
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        *44193200* 44193400  44193600 *44194000* 44195000 *44201110* 44201120 *44201400* 44201500 *44201600**44202119*
I   --  REAL  --  DECLARED AT 44206700
        *44240560* 44240600  44240620  44240640  44240680 *44240700* 44240800  44240820  44240900  44240920 *44243250*
         44243750  44245000  44245500  44250500  44253000 *44254500* 44255000  44255500 *44259500* 44260000  44262500
         44264500 *44268000* 44268500  44269500  44270000 *44276000*
I   --  REAL  --  DECLARED AT 45002000
        *45092110* 45092120  45092130  45092140  45092180  45092190  45092230  45092310  45092360 *45093000* 45094000
         45094600  45099600 *45104100* 45104200 *45106000* 45107000  45109000  45111000  45112000  45113000  45122000
         45123000  45127000  45131000  45131100 *45135110* 45135130 *45135170* 45135190 *45155000* 45157000
I   --  STREAM VARIABLE  --  DECLARED AT 45131100
         45131400
IB  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02347160
         02347150  02347160
IB  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 07377000
         07376000  07377000  07393000  07394500  07396000  07398100 *07400000* 07402000
IB  --  STREAM VARIABLE  --  DECLARED AT 07393000
IB  --  STREAM VARIABLE  --  DECLARED AT 07398100
         07398300
ICW  --  REAL  --  DECLARED AT 14002000
        *14018000* 14058000  14059000  05952915
ID  --  STREAM VARIABLE  --  DECLARED AT 08887100  --  OCCURS AT 05952865
         08890010
ID  --  STREAM VARIABLE  --  DECLARED AT 20030800
         20032100
IDENT  --  DEFINE  --  DECLARED AT 20219000
         20327000  20366000  20409000  20416500  20420000  20426000  20432000  20438000  20478510  20484250  20567065
         20567105  20567158  20567225  20567270  20569260  20569830  20569940  20569970  20570150  20570210  20570450
         20573410  20573440  20577050  20587800  20590655  20590675  20590695  20591750  20591850  20593150  20593310
         20594450  20596350  20717000  20720000
IDLETIME  --  PROCEDURE  --  DECLARED AT 02360000
         06191000  12611000  12818500  20167650  22011000
IDLETIMER  --  SUBROUTINE  --  DECLARED AT 12609500
         12612500  12698000
IDLETIMER  --  SUBROUTINE  --  DECLARED AT 12817000
         12820000  12854000
IL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08546000
         08565000
IL  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16081000
         16062000
IL  --  STREAM VARIABLE  --  DECLARED AT 20289395
         20289485
IL  --  REAL  --  DECLARED AT 37180000
         37180300 *37233500* 37248500
ILL  --  REAL  --  DECLARED AT 00299000
IMASK  --  DEFINE  --  DECLARED AT 19900280
         19900400  19900490  19900660  19900680  19900860
IMASK  --  DEFINE  --  DECLARED AT 19901850
         19903907  19904360
IN  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16580600
         16366000
INBUFF  --  REAL  --  DECLARED AT 07006000
         07032100  07051110  07057000  07059000  07060100  07066100 *07101000* 07118000  07125000  07127500  07128000
         07139575  07140000  07179260  07235000
INBUFF  --  STREAM VARIABLE  --  DECLARED AT 07032100
         07033000 *07034500* 07036220  07036250  07036290
INBUFF  --  STREAM VARIABLE  --  DECLARED AT 07066100
         07066300  07066610 *07066630**07066660*
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INBUFF  --  STREAM VARIABLE  --  DECLARED AT 07179260
INC  --  REAL  --  DECLARED AT 28002800
INC  --  REAL  --  DECLARED AT 28203200
        28203400 *28240400**28244600*
INCR  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04194000
        04165000  04189000
INCR  --  LABEL  --  DECLARED AT 08680500  --  OCCURS AT 08692600
        08693400  08695600
INCSC  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20580200
        20573200  20577075  20577150  20580000
INCSC  --  LABEL  --  DECLARED AT 20597800  --  OCCURS AT 20606850
        20599100  20602650  20602850  20602950  20603750  20604200  20604360  20604450  20604900  20605100  20605430
        20605460  20605700  20605702  20606700  20608072  20608080  20609420
INCW  --  REAL  --  DECLARED AT 14002000
       *14015000* 14015200  14016000  14017000  14018000  14031000 *14035000* 14036000  14037000  14038000  14045000
        14059000 *14060000* 14064000  14077000
INDEPENDENTRUNNER  --  PROCEDURE  --  DECLARED AT 02012000
        02033000  02137000  02347430  04137260  04224000  05706100  06353650  07264400  07449000  08276520  08836500
        08998400  12425200  12528500  14432000  14541100  16263600  16522000  16523000  16610600  16784500  16959500
        18438180  18522700  19685460  19799050  20609700  22045000  22069500  22212400  24167000  28440200  38732100
        38789000  41310800  48009000  48010082  48014000  48084300  48126430  48132000
INDEX  --  REAL  --  DECLARED AT 15402000
        15404000  15418500  15420000  15426000  15438020  15438040  15438050  15438060
INDEX  --  STREAM VARIABLE  --  DECLARED AT 15426000
INDEX  --  STREAM VARIABLE  --  DECLARED AT 15438060
        15438070
INDEX  --  INTEGER  --  DECLARED AT 24105000
        24126000  24133000  24143000 *24145000* 24146000 *24153000**24154000**24155000*
INDEX  --  INTEGER  --  DECLARED AT 24203000
       *24212000* 24213000  24214000  24223000  24224000
INDX  --  STREAM VARIABLE  --  DECLARED AT 02222000
        02251010  02251020  02251050
INDX  --  REAL  --  DECLARED AT 28003200
        28003400
INDX  --  REAL  --  DECLARED AT 28401400
       *28435200**28435400* 28438200 *28468200* 28468600 *28476800* 28477200
INDX  --  STREAM VARIABLE  --  DECLARED AT 28438200
        28438400
INFO  --  REAL  --  DECLARED AT 08099700
       *08101650**08103300**08103550* 08104550  08114100
INFO  --  DEFINE  --  DECLARED AT 12370000
        12392000  12395500  12418500  12420500  12422000  12422500  12435500  12438000  12444000  12459000  12462000
        12463000  12464000  12465000  12466000
INFO  --  REAL  --  DECLARED AT 14624550
       *14636000**14637000**14640000**14642000**14643000**14644400* 14645000 *14679000**14685000* 14687000  14688000
        14690000 *14695000**14705000* 14706000  14707000 *14712510* 14712550
INFOSIZE  --  DEFINE  --  DECLARED AT 12218500
INFOSIZE  --  DEFINE  --  DECLARED AT 12369000
        12392000  12395500  12408000  12408500  12411000  12418500  12420500  12422000  12422500  12435500  12438000
        12444000  12459000  12462000  12463000  12464000  12465000  12466000
INFO1  --  STREAM VARIABLE  --  DECLARED AT 16609100
        16609400
INFO2  --  STREAM VARIABLE  --  DECLARED AT 16609100
INIT  --  LABEL  --  DECLARED AT 18501100  --  OCCURS AT 18505000
        18501800  18501900  18502000  18502100  18502200
INIT  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18702300
        18701300  18701400  18701500  18701600  18701700
```

```
INIT -- LABEL -- DECLARED AT 20566600 -- OCCURS AT 20580100
        20572100  20576770
INITCW -- REAL -- DECLARED AT 22235000
       *22300000* 22301000
INITIALIZATION -- LABEL -- DECLARED AT 20597650 -- OCCURS AT 20603900
        20599000  20605550
INITIALIZE -- PROCEDURE -- DECLARED AT 44010000 -- FORWARD AT 08303000
        08303100  44101000  44149000  44201300  44206400  46000000
INITIALIZE -- LABEL -- DECLARED AT 12514000 -- OCCURS AT 12665000
        12515000
INITIALIZE -- DEFINE -- DECLARED AT 13025000
        13095000
INITIALIZEIT -- REAL PROCEDURE -- DECLARED AT 20586700
       *20587700**20587850**20587950**20588350**20589550* 20589650  20603900
INITIATE -- LABEL -- DECLARED AT 00024270 -- OCCURS AT 48018000
        04238000  06360570  06463340  07072500  07091100  12670750  13094000  14193200  14203600  14279350  14292160
        14659000  14660525  14670600  14680000  14697000  14704000  14709000  14713000  15105000  17927500  18505000
        18525800  18529500  18530100  18540300  18541100  18557400  18559700  18565600  18571200  18580800  18581100
        18581700  18593300  18702300  18710249  18710266  18710278  18710500  18710600  18710700  18710800  18711000
        18711300  18711400  18711500  18711600  18711800  18721000  18730400  18741200  18750200  18760500  18771000
        18781000  18791900  18800400  18810400  18835700  18843800  18845600  18860200  18870900  19571000  19577000
        19584000  19584700  19595000  19637000  19668000  19683500  19685075  19685350  19685440  19685456  19685550
        19685590  28018600  28307730  28307800  28824500  28891000  31005500  31023000  37047250  37185400  38015100
        38106200  38204200  39307300  42525160  42528000  42539100  42548000  42552000  48108000  48146000
INITIATE10 -- PROCEDURE -- DECLARED AT 04000000
        04025000  04050000  04118000  04180000
INL -- LABEL -- DECLARED AT 07009000 -- OCCURS AT 07115000
        07127000  07169500
INLP -- LABEL -- DECLARED AT 44020000 -- OCCURS AT 44104000
        44110000
INOUT -- DEFINE -- DECLARED AT 15071000
        15080000
INPUT -- SUBROUTINE -- DECLARED AT 07049000
        07069000  07115200  07220000
INPUT -- LABEL -- DECLARED AT 22062000 -- OCCURS AT 22179000
        22156100  22162000  22173000
INPUT -- DEFINE -- DECLARED AT 38385600
        38389300
INPUTL -- LABEL -- DECLARED AT 07009100 -- OCCURS AT 07051110
        07051130
INQCT -- REAL -- DECLARED AT 00299000
INQINPUTAREAV -- DEFINE -- DECLARED AT 00017400
INQUEST -- LABEL -- DECLARED AT 00008000 -- OCCURS AT 48125500
        46011000
INQUIRYBUFFAREAV -- DEFINE -- DECLARED AT 00017240
INQUPTSTOPPED -- DEFINE -- DECLARED AT 00081660
INREC -- REAL ARRAY -- DECLARED AT 12502000
        12502500 *12615500**12616000**12623200* 12647500 *12655500* 12668000
INREC -- REAL ARRAY -- DECLARED AT 12802000
        12802500  12823000  12849000  12850000  12851000  12855500  12858000  12858500  12859000  12859500  12860000
        12860100
INREC -- STREAM VARIABLE -- DECLARED AT 12823000
        12825500
INREC -- REAL ARRAY -- DECLARED AT 13003000
        13035000 *13036000**13048000**13075000**13076000**13080000* 13080100  13081000  13099000  13101000  13127899
        13128000
INS -- REAL -- DECLARED AT 12205500
       *12299500* 12301500  12302000  12302500  12303000  12303500
```

```
INS  --  REAL  --  DECLARED AT 12353000
       *12434000* 12435500  12438000  12444000
INSERTORFORK  --  SUBROUTINE  --  DECLARED AT 28427400
       28470200  28474200  28478600
INSTRUCT  --  REAL  --  DECLARED AT 12206000
       *12252000**12257500* 12295000 *12296000* 12296500 *12297500* 12299500 *12300500*
INSTRUCT  --  REAL  --  DECLARED AT 12353500
       *12431500* 12434000 *12435000*
INSW  --  SWITCH LABEL  --  DECLARED AT 39008000
       39093500
INT  --  LABEL  --  DECLARED AT 14166100  --  OCCURS AT 14208010
       14206340
INTABLE  --  REAL ARRAY  --  DECLARED AT 00135100
       14186100  14227400  22416000  44156100
INTABLEROW  --  REAL ARRAY  --  DECLARED AT 00135100
       *14367100**20193300**20194300* 20194400  22408000  22413010
INTARRAYAREAV  --  DEFINE  --  DECLARED AT 00017410
       09506000
INTERRUPT  --  PROCEDURE  --  DECLARED AT 42510000  --  FORWARD AT 00370500
       14218055  42554000  48107000
INTFINISH  --  PROCEDURE  --  DECLARED AT 45000000  --  FORWARD AT 44008998
       44280000
INTFREE  --  DEFINE  --  DECLARED AT 00081300
       09630000  09677000  44250000
INTLOC  --  REAL  --  DECLARED AT 09501000
       *09506000**09508600* 09508700  09508800
INTO  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 07003610
       07003615  07003720  07003730
INTRINSIC  --  LABEL  --  DECLARED AT 22236000  --  OCCURS AT 22406000
       22286190  22386010
INTRINSICTABLEBUILDER  --  PROCEDURE  --  DECLARED AT 09500000  --  FORWARD AT 00489000
       09657000  44248000
INTRNSC  --  REAL ARRAY  --  DECLARED AT 00135000
      *09506000* 09506500  09507000 *09508000* 09508600 *09508700**09509500**09510000* 09534500  09612000 *09624100*
       09636000  14186020  14186160  14198100 *14203300**14203500**14206135**14209300* 15545000 *22427000*
INTRPTX  --  DEFINE  --  DECLARED AT 00067110
       48032400  48032700  48032930
INTS  --  REAL  --  DECLARED AT 44012000
       *44149000*
INTS  --  REAL  --  DECLARED AT 44206800
       44240600  44240640  44240660 *44240680* 44281000
INTS  --  REAL  --  DECLARED AT 45002100
INTSIZE  --  REAL  --  DECLARED AT 00135000
       09508000 *09534500**09605000**09612000* 15539000  20153400  20154000  20194100
INTSS  --  REAL  --  DECLARED AT 44012000
       *44150005*
INTSS  --  REAL  --  DECLARED AT 44206800
       44281000
INTSS  --  REAL  --  DECLARED AT 45002100
INTWORD  --  REAL  --  DECLARED AT 15536000
       *15545000* 15548000
INT1  --  INTEGER  --  DECLARED AT 16696700
       *16826800*
INT13  --  SUBROUTINE  --  DECLARED AT 22286010
       22419500  22423300
INT2  --  INTEGER  --  DECLARED AT 16696800
       *16826900*
```

```
INT3  --  INTEGER  --  DECLARED AT 16696900
        *16828000*
INT4  --  INTEGER  --  DECLARED AT 16697000
        *16826800*
INUSE  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05966200
        05963100
INUSEOK  --  REAL SUBROUTINE  --  DECLARED AT 06091300
        06096300  06112200
INVALIDINDEX  --  LABEL  --  DECLARED AT 42511000  --  OCCURS AT 42530000
        42512000
INVALIDNUM  --  SUBROUTINE  --  DECLARED AT 12618500
        12691500  12706500
INVLDAUXIO  --  DEFINE  --  DECLARED AT 00642100
        06009300
INXLST  --  REAL  --  DECLARED AT 20382050
       *20382240**20382320* 20382480
INXLST  --  DEFINE  --  DECLARED AT 28404800
        28448200  28469000  28469600  28477600  28478200
IO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
        00390000  00390100
IO  --  DEFINE  --  DECLARED AT 20230000
        20504000
IO  --  SUBROUTINE  --  DECLARED AT 28233400
        28241200
IO  --  SUBROUTINE  --  DECLARED AT 28829000
        28838000  28847000
IO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37286200
        37286000  37286100  37291200  37291400
IO  --  INTEGER  --  DECLARED AT 38003000
        38028000  38032000  38045110  38045160  38049300  38056000  38072000  38076000  38095000
IO  --  INTEGER  --  DECLARED AT 38102300
        38106700
IO  --  INTEGER  --  DECLARED AT 38200300
        38204700
IO  --  INTEGER  --  DECLARED AT 39002000
        39028000  39040000  39041000 *39088000* 39092060  39092500  39095000  39155000 *39249000* 39303000  39306010
IOBUFFERAREAV  --  DEFINE  --  DECLARED AT 00017220
        07095100  07101000  12672500
IOBUSY  --  LABEL  --  DECLARED AT 00024270  --  OCCURS AT 48117000
        46002000
IOD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019000
        00018000  00019000
IOD  --  REAL  --  DECLARED AT 04068000
        04074000  04083000  04088000  04094000  04095000  04097000
IOD  --  STREAM VARIABLE  --  DECLARED AT 04083000
        04084000
IOD  --  STREAM VARIABLE  --  DECLARED AT 04088000
        04089000
IOD  --  REAL  --  DECLARED AT 04102000
       *04104000* 04105000  04105100  04105510  04105750  04105950  04105998  04106000
IOD  --  REAL  --  DECLARED AT 04127000
       *04194100* 04194400  04195100  04206000  04207000  04208000  04209000  04210000  04212000 *04231000* 04232000
IOD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04242000
        04240000  04241000 *04244000* 04246000  04247000 *04248000* 04249000  04250000  04251200
IOD  --  STREAM VARIABLE  --  DECLARED AT 04251200
        04251600
IOD  --  REAL  --  DECLARED AT 04257800
        04280400 *04286400* 04300000  04310400 *04312600* 04312800
```

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IOD  --  REAL  --  DECLARED AT 04355800
        *04425600**04427800* 04428200  04428600  04429400 *04431400* 04431600
IOD  --  REAL  --  DECLARED AT 04552000
         04555600  04560000  04565000  04567250  04567300 *04568340**04568410**04568500* 04568520  04568530 *04578000*
        *04582000**04585000**04588020**04588070**04588100**04588130* 04588210  04588220  04588240 *04588250* 04588260
         04588300  04588430 *04588540**04592000**04597000**04599000**04628000**04632000**04634200**04635000**04638650*
        *04657200**04658200*
IOD  --  REAL  --  DECLARED AT 04668650
         04671300  04671700  04672000  04672350  04672400 *04675900**04676000**04676150**04676300**04676500* 04676700
         04676800 *04676850* 04677050  04677150 *04678750**04679500**04679600**04679750**04679900**04683000**04683100*
        *04683950**04684050**04684300*
IOD  --  REAL  --  DECLARED AT 06004000
        *06010000* 06016100  06017000
IOD  --  REAL  --  DECLARED AT 06068400
         06068500 *06098500* 06098900 *06107400*
IOD  --  REAL  --  DECLARED AT 08172000
        *08174000* 08176000  08177000
IOD  --  REAL  --  DECLARED AT 08704000
         08704100 *08722000**08724000* 08726000  08728000
IOD  --  REAL  --  DECLARED AT 08851000
         08865000  08866000  08915000  08933000  08935000  08939000  08940000  08942000  08943000  08946000
IOD  --  REAL  --  DECLARED AT 09601000
IOD  --  REAL  --  DECLARED AT 12503500
         12592500 *12627500* 12639500  12641000  12643000  12643500 *12648000**12649000**12650500**12651000* 12651500
        *12749500**12751500*
IOD  --  REAL  --  DECLARED AT 12803500
IOD  --  REAL  --  DECLARED AT 13004000
         13049000  13051000  13052000 *13062000* 13066000
IOD  --  REAL  --  DECLARED AT 14164000
        *14186152**14203010* 14203020  14206000  14206100  14206110  14292000  14292110  14292120
IOD  --  REAL  --  DECLARED AT 19694000
         19738000  19743000
IOD  --  REAL  --  DECLARED AT 20388000
         20404000  20407000 *20495000* 20496000 *20497000**20507000* 20507100
IOD  --  REAL  --  DECLARED AT 22231000
        *22322000* 22325200  22331400  22333800
IOD  --  REAL ARRAY  --  DECLARED AT 28004600
        *28069000* 28069200  28069400  28074050 *28077600* 28078000  28078400  28078800 *28079000* 28080000  28080400
         28080600 *28080800* 28084250  28085800 *28095800**28096200* 28096600  28096800
IOD  --  REAL ARRAY  --  DECLARED AT 28205000
         28234800 *28235400* 28236000  28236200  28236400  28237200 *28240600* 28241800  28242000  28242400  28244200
         28245000 *28245200* 28267000  28268600
IOD  --  REAL ARRAY  --  DECLARED AT 28804000
         28832000  28832500 *28869000* 28870000  28871000 *28872000**28873000*
IOD  --  REAL  --  DECLARED AT 38365000
        *38495000* 38496000
IOD  --  REAL  --  DECLARED AT 38549000
IOD  --  REAL  --  DECLARED AT 38656000
IOD  --  REAL  --  DECLARED AT 41007200
IODESC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04003000
         04000000  04001000  04004110  04004140  04004150  04006000  04009000  04010000
IODESC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04043000
         04040000  04041000  04050000  04063000
IOD1  --  REAL  --  DECLARED AT 19694000
        *19766000* 19766500
IOFINISH  --  PROCEDURE  --  DECLARED AT 04122000
         46006000  46007000  46008000  46009000
```

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IOM  --  REAL  --  DECLARED AT 38002000
IOM  --  REAL  --  DECLARED AT 38102200
IOM  --  REAL  --  DECLARED AT 38200200
IOM  --  REAL  --  DECLARED AT 39001100
        39083100
IOMASK  --  REAL  --  DECLARED AT 00425000
        02275700  02277000  04151230  04228000  04249000  04310400  04429400  04565000  04672000  06066000  06098600
        06099100  06215000  06257000  06464900  07146000  07149000  07177000  07391000  07392000  07413000  07414000
        07445000  08386000  08670000  08866000  08915000  08933000  08935000  08940000  08943000  08946000  13051000
        14206100  14237000  14292110  14383000  14384000  14390000  14393000  14398800  14399400  18780100  19743000
        20407000  20588600  22049000  22332400  28077600  28079000  28080400  28085800  28096800  28240600  28241800
        28242000  28245000  28245200  28839000  28848000  28850000  28851000  28852100  37394000  37394150  38002000
        38102200  38200200  38372000  38555000  38574000  38668000  39001100  40317220 *44191000*
IOMASK  --  REAL  --  DECLARED AT 38002000
        38031000  38081250  38092000
IOMASK  --  REAL  --  DECLARED AT 38102200
        38106600
IOMASK  --  REAL  --  DECLARED AT 38200200
        38204600  38250500  38285500
IOMASK  --  REAL  --  DECLARED AT 39001100
        39027000 *39083100**39293500*
IOQUE  --  REAL ARRAY  --  DECLARED AT 00206000
       *02068000**02100000* 02294000 *02300000* 04025000  04046000 *04063000* 04118000  04137202  04157000  04168000
       *04170800* 04180000  04194100 *04199000* 04272000  04281600  04285800  04286200  04286400 *04309200* 04315400
       *04315600* 04336000  04368000  04372100  04391200 *04391560**04391570**04391600* 04398400  04421900  04425600
       *04426000* 04427800  04559000 *04560000* 04570000  04671650 *04671700**04685200* 06463900 *07063000* 08104600
        20150100  20169600  20289055 *37333000* 44171000 *44193400*
IOQUEAVAIL  --  REAL  --  DECLARED AT 00205500
       *02068000**02100000**02300000**04046000**04199000**04309200**04315600**04426000**04559000**04671650**07063000*
       *37333000**44085600*
IOQUESLOTS  --  REAL  --  DECLARED AT 00205500
       *02068000**02100000**02300000* 04045000  04045200 *04060500**04199000**04309200**04315600**04426000* 04558000
       *04558500* 04671550 *04671600**07063000**37333000**44085500*
IOREQ  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14705000
        14632100
IOREQUEST  --  PROCEDURE  --  DECLARED AT 04040000  --  FORWARD AT 02696500
        04106000  04246000  04316600  06017000  06098900  08726000  14687000  14707000  19685550  24042875  28096200
        28235400  28832000  37393000  38080500
IOT  --  INTEGER  --  DECLARED AT 08528000
       *08537000*
IOT  --  INTEGER  --  DECLARED AT 08733000
        08737000 *08756000* 08762000  08763000  08764000  08770000  08771000  08772000  08774000 *08786000**08790000*
        08791000
IOT  --  STREAM VARIABLE  --  DECLARED AT 08737000
        08751000
IOT  --  STREAM VARIABLE  --  DECLARED AT 08791000
IOT  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18711100
        18701200
IOTIME  --  REAL ARRAY  --  DECLARED AT 00164000
       *02174000**04195000* 06194000  08535000 *08763000**08771000**12696500* 12853500  18711100 *20172700* 22019000
        44159000 *44193000**45127000*
IROW  --  REAL  --  DECLARED AT 14002000
       *14017000* 14019000 *14035000* 14040000  14059000  14077000
IREEL  --  REAL  --  DECLARED AT 28001800
        28002000  28028000 *28028200* 28032200 *28037800**28054400* 28056000 *28057600*
IREEL  --  REAL  --  DECLARED AT 28202200
        28202400 *28226800**28252000*
```

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IRPB  --  REAL  --  DECLARED AT 44013000
IRPB  --  REAL  --  DECLARED AT 44206900
IRPB  --  REAL  --  DECLARED AT 45002300
IRPBTS  --  INTEGER  --  DECLARED AT 44015000
IRPBTS  --  INTEGER  --  DECLARED AT 44207100
IRPBTS  --  INTEGER  --  DECLARED AT 45002500
IRPBUF  --  REAL  --  DECLARED AT 44013000
IRPBUF  --  REAL  --  DECLARED AT 44206900
IRPBUF  --  REAL  --  DECLARED AT 45002400
        45002500
IRPDBS  --  REAL  --  DECLARED AT 44013000
IRPDBS  --  REAL  --  DECLARED AT 44206900
IRPDBS  --  REAL  --  DECLARED AT 45002300
IRPTB  --  REAL  --  DECLARED AT 44013000
IRPTB  --  REAL  --  DECLARED AT 44206900
IRPTB  --  REAL  --  DECLARED AT 45002300
IRPTU  --  REAL  --  DECLARED AT 44013000
IRPTU  --  REAL  --  DECLARED AT 44206900
IRPTU  --  REAL  --  DECLARED AT 45002300
        45002400
IRPWRS  --  INTEGER  --  DECLARED AT 44015000
IRPWRS  --  INTEGER  --  DECLARED AT 44207100
IRPWRS  --  INTEGER  --  DECLARED AT 45002500
        45002700
IRSTACKAREAV  --  DEFINE  --  DECLARED AT 00017550
ISTACK  --  REAL ARRAY  --  DECLARED AT 00159000
        44179000  44189600  48051000
IT  --  REAL  --  DECLARED AT 09602000
        09602100 *09642000* 09643000
IT  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16256000
        16064000
IT  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18710300
        18701200
IU  --  REAL  --  DECLARED AT 07006080
        07051000  07051120  07059100  07059300  07062000  07065000 *07072100**07072400* 07072600  07073000  07074100
        07075000  07076000  07077000  07078000  07082000  07179200  07232500  07233000
IU  --  REAL  --  DECLARED AT 28001600
        28011200  28012100  28012110  28014000  28014100  28019800  28021800  28022000  28023800 *28028000* 28028200
        28028400  28028600  28029800  28030800  28031000  28032000  28033200  28033400  28033800  28034000  28037600
        28042600  28056400  28057400  28059600  28063000  28063200  28065000 *28068400* 28077200  28078000  28078800
        28086600  28086800  28088800  28089200  28090200  28090400  28098600
IU  --  REAL  --  DECLARED AT 28202000
        28212000  28213000  28216400  28216600  28218400  28222400  28222600  28223000  28223200  28226600  28230000
        28240800  28244800 *28246200* 28247000  28247200 *28251600* 28251800  28252000  28253600  28261400  28262200
        28263400  28265000  28269400  28270820  28273000  28303200  28304700  28304800
I1  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
        00454000  00454100
I1  --  INTEGER  --  DECLARED AT 08733000
       *08790000* 08791000
I1  --  STREAM VARIABLE  --  DECLARED AT 08791000
I1  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
        17000000  17000200  17003250  17003300
I1  --  INTEGER  --  DECLARED AT 18199000
      *18425300* 18425600  18426100 *18431400* 18431800  18431900
I1  --  STREAM VARIABLE  --  DECLARED AT 18521000
        18521600
I1  --  INTEGER  --  DECLARED AT 41430300
```

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      *41500400**41500700* 41500800 *41500900*
I2  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
        00454000  00454100
I2  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
        17000000  17000200  17003300  17003400
I2  --  INTEGER  --  DECLARED AT 18199000
      *18422000* 18425100  18426100 *18428000* 18429000 *18431400* 18431500 *18431600*
I2  --  INTEGER  --  DECLARED AT 41430300
      *41500200* 41500700  41500900  41501700  41502000  41502300 *41502400*
I3  --  INTEGER  --  DECLARED AT 18199000
      *18431400* 18431500  18431600 *18431700* 18431800  18431900
I4  --  INTEGER  --  DECLARED AT 18500200
        18503300 *18559400*
I4  --  INTEGER  --  DECLARED AT 18700200
      *18710100* 18710200 *18710246**18710258**18710274**18710300**18710700**18710800**18710900**18711100**18711200*
      *18711400**18711500**18711600**18711790**18730100* 18730200  18740100  18740400 *18740600* 18740900  18870300
I4  --  INTEGER  --  DECLARED AT 19502000
I5  --  INTEGER  --  DECLARED AT 18500200
I5  --  INTEGER  --  DECLARED AT 18700200
I5  --  INTEGER  --  DECLARED AT 19502000
I6  --  INTEGER  --  DECLARED AT 18500200
      *18559600*
I6  --  INTEGER  --  DECLARED AT 18700200
I6  --  INTEGER  --  DECLARED AT 19502000
J   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00336100
J   --  STREAM VARIABLE  --  DECLARED AT 02221000
        02242000
J   --  REAL  --  DECLARED AT 02383000
      *02387000* 02391000
J   --  REAL  --  DECLARED AT 04553000
      *04568420**04568460* 04568480 *04629000* 04633200 *04658800* 04659000  04659100  04659200
J   --  REAL  --  DECLARED AT 04704000
      *04725000* 04726000  04727000 *04728000* 04729000 *04733000* 04734000
J   --  INTEGER  --  DECLARED AT 05702000
      *05705000* 05706000  05707000 *05709000* 05714000 *05716000* 05723000  05725000  05728100 *05728120* 05728180
      *05728200*
J   --  STREAM VARIABLE  --  DECLARED AT 05709000
J   --  INTEGER  --  DECLARED AT 05841615
        05841620 *05842475**05843000**05843700**05843800* 05844920  05844935  05845400  05845700
J   --  INTEGER  --  DECLARED AT 05847700
        05848255 *05848900* 05849420 *05849480* 05849500  05850200  05850300  05851600  05852100  05852700
J   --  INTEGER  --  DECLARED AT 05951800
        05952240 *05959000**05960800* 05961000  05961800  05962000 *05967000* 05967200  05971400  05971800  05974000
        05974200  05975000
J   --  INTEGER  --  DECLARED AT 06184000
      *06212000* 06214000 *06216000* 06217000 *06230000* 06230100  06234000 *06245000**06247000* 06248000  06249000
      *06250000**06260100* 06262000 *06263200**06267000* 06269000
J   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06350300
        06350000  06350300  06351000  06355000 *06380100* 06380150  06380250  06380400  06380525  06380550 *06380700*
        06380750  06380800  06380850  06380900  06380950 *06381000* 06381300 *06381395* 06381400
J   --  STREAM VARIABLE  --  DECLARED AT 06355000
        06357000 *06359500*
J   --  INTEGER  --  DECLARED AT 06404000
      *06413000* 06414000  06417500
J   --  STREAM VARIABLE  --  DECLARED AT 06463984
J   --  REAL  --  DECLARED AT 07299000
      *07315000* 07317000  07318000  07321100  07322000 *07330100* 07330200  07330300  07330400
```

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J  --  REAL  --  DECLARED AT 07458000
       *07461560* 07461600 *07462400* 07462500
J  --  STREAM VARIABLE  --  DECLARED AT 07504000
        07508000
J  --  INTEGER  --  DECLARED AT 08098950
       *08109200* 08109250 *08110050* 08110350 *08111850* 08112150
J  --  STREAM VARIABLE  --  DECLARED AT 08110350
        08110500 *08111250*
J  --  STREAM VARIABLE  --  DECLARED AT 08112150
        08112600 *08112900*
J  --  INTEGER  --  DECLARED AT 08255200
        08255400 *08268900* 08268950 *08270450*
J  --  STREAM VARIABLE  --  DECLARED AT 08462000
        08463000 *08468000*
J  --  STREAM VARIABLE  --  DECLARED AT 08540000
        08540100
J  --  REAL  --  DECLARED AT 08568200
       *08568700* 08569600  08569900  08569920  08570000 *08570300* 08570400  08570500  08570600  08570700  08570800
        08571200  08571300  08571400  08571500  08571800  08572400
J  --  STREAM VARIABLE  --  DECLARED AT 08571800
        08571900
J  --  STREAM VARIABLE  --  DECLARED AT 08887100
        08889000
J  --  REAL  --  DECLARED AT 09601000
        09602100 *09633100* 09633200
J  --  STREAM VARIABLE  --  DECLARED AT 12473200
        12473230
J  --  REAL  --  DECLARED AT 14164300
       *14218080* 14218082
J  --  INTEGER  --  DECLARED AT 14349000
        14431520
J  --  STREAM VARIABLE  --  DECLARED AT 14431520
        14431550
J  --  REAL  --  DECLARED AT 14545000
        14554500 *14556000* 14557500 *14563000**14570100* 14580000  14592000 *14601000* 14601500  14602000  14603330
        14603400  14603700  14609000
J  --  STREAM VARIABLE  --  DECLARED AT 15021000
       *15024000**15034000**15036000*
J  --  STREAM VARIABLE  --  DECLARED AT 15426000
        15428000
J  --  REAL  --  DECLARED AT 15612000
       *15622000* 15624000
J  --  REAL  --  DECLARED AT 16048000
        16114000  16117000 *16225000* 16228000  16236000  16237000 *16238000*
J  --  REAL  --  DECLARED AT 16349000
       *16591000* 16592000  16599000  16600000  16604000
J  --  REAL  --  DECLARED AT 16695500
        16696000  16696900  16698210  16806500  16807000  16807500  16808500  16810000  16811500  16815500  16817000
        16818000 *16827000**16827900* 16828000  16828200
J  --  REAL  --  DECLARED AT 16911000
        16911500 *16950000* 16950500  16951500 *16952000**16956040* 16956090
J  --  STREAM VARIABLE  --  DECLARED AT 16956040
J  --  STREAM VARIABLE  --  DECLARED AT 17003300
        17003950
J  --  STREAM VARIABLE  --  DECLARED AT 17907000
        17912000
J  --  REAL  --  DECLARED AT 18198000
```

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        *18233000* 18247500  18248500
J  --   REAL  --  DECLARED AT 18502300
        *18520900* 18521000 *18522300* 18523100 *18527000**18527500* 18528200  18552700  18557300  18570000
J  --   STREAM VARIABLE  --  DECLARED AT 18528200
         18528800
J  --   STREAM VARIABLE  --  DECLARED AT 18570000
         18570400
J  --   REAL  --  DECLARED AT 18701800
        *18720400* 18720500 *18720700* 18720800 *18740200* 18741100 *18770300* 18770400  18770900  18790400 *18791680*
         18830900 *18831400* 18831700  18832900 *18841700**18844200* 18844300  18845400
J  --   STREAM VARIABLE  --  DECLARED AT 18830900
        *18831200*
J  --   STREAM VARIABLE  --  DECLARED AT 18831700
        *18832100* 18832300
J  --   STREAM VARIABLE  --  DECLARED AT 18832900
        *18833300* 18833500
J  --   REAL  --  DECLARED AT 19519000
J  --   REAL  --  DECLARED AT 19901500
        *19903915* 19903920  19903940  19903960  19904020 *19904030* 19904060 *19904070*
J  --   STREAM VARIABLE  --  DECLARED AT 20328000
        *20338000**20343000**20348000*
J  --   INTEGER  --  DECLARED AT 20382050
        *20382120* 20382140 *20382540*
J  --   STREAM VARIABLE  --  DECLARED AT 20754000
J  --   REAL  --  DECLARED AT 22002000
         22003000 *22007000* 22007100 *22011100* 22011300 *22012000**22013000**22016000* 22018000  22021000  22022000
         22024500  22027000  22029000  22049000
J  --   REAL  --  DECLARED AT 22902000
        *22911000* 22912000  22914000  22915000  22916000
J  --   REAL  --  DECLARED AT 28003400
         28081600  28087000  28093800  28093900  28094600  28099200
J  --   REAL  --  DECLARED AT 28203800
         28204000 *28246400* 28246800  28253200  28255200  28265400  28270830 *28272800* 28291200  28297200  28302600
        *28307705* 28307710  28307720
J  --   STREAM VARIABLE  --  DECLARED AT 28291200
         28291600 *28292000*
J  --   REAL  --  DECLARED AT 28803000
         28865000  28866000 *28867000* 28868300  28868500 *28877000**28879000* 28881000  28883000  28889000
J  --   STREAM VARIABLE  --  DECLARED AT 30920000
         30923000
J  --   STREAM VARIABLE  --  DECLARED AT 32000810
         32001100
J  --   INTEGER  --  DECLARED AT 37272000
        *37277000* 37278000  37278200  37280000 *37285300* 37285310  37285320
J  --   REAL  --  DECLARED AT 37303000
        *37314200* 37318000
J  --   STREAM VARIABLE  --  DECLARED AT 37353000
         37354000
J  --   STREAM VARIABLE  --  DECLARED AT 37361000
         37377000
J  --   INTEGER  --  DECLARED AT 37388000
         37388100 *37389000* 37399000
J  --   REAL  --  DECLARED AT 37507000
        *37522000* 37523000  37525000  37527000 *37529000**37534000* 37535000
J  --   INTEGER  --  DECLARED AT 38360000
        *38377200**38378000* 38378400 *38507500* 38507800  38509000
J  --   INTEGER  --  DECLARED AT 38545000
```

```
        *38581100**38624000**38629000* 38640000
J   --  INTEGER  --  DECLARED AT 38653000
        *38703000*
J   --  REAL  --  DECLARED AT 40004000
        *40250000* 40254100  40257060  40261010  40261044  40261048  40261200  40261300 *40262500* 40263000 *40264000*
         40264500 *40275300**40276000* 40278000  40278100  40278200  40280100  40283500  40293101  40311300 *40314000*
        *40322100**40322400* 40322420  40322430  40322442  40322800
J   --  STREAM VARIABLE  --  DECLARED AT 40261300
         40261400
J   --  INTEGER  --  DECLARED AT 41002000
        *41051400* 41051500 *41198000* 41200000
J   --  REAL  --  DECLARED AT 41600300
        *41600900* 41602900  41604200  41604400  41604500  41604700  41604900  41605100  41605300  41605400  41605500
         41605700  41605900  41606000  41606100
J   --  REAL  --  DECLARED AT 44011000
         44080000 *44081000**44104000* 44110000 *44120000**44128000* 44129000  44133000 *44152000* 44153000  44154000
        *44154010**44173010**44173200*
J   --  REAL  --  DECLARED AT 44206700
        *44240600* 44240620  44240640 *44240840* 44240860  44240880 *44240900* 44240920 *44263000* 44264000  44264500
        *44270500* 44271000
J   --  REAL  --  DECLARED AT 45002000
        *45092120**45092130* 45092210  45092250  45092280  45092340  45092370 *45092380**45094000* 45094200 *45109000*
         45114000  45115000  45118000  45121000  45122000  45124000  45125000  45126000 *45131100* 45131700
J   --  STREAM VARIABLE  --  DECLARED AT 45131100
         45131200
JAR  --  REAL ARRAY  --  DECLARED AT 00133000
         00138000 *02206100* 02221000 *02259000* 02261100  02366000  02368000  02374000 *02375000* 04252500  04302200
         04710000  04711000  04722000  04723000  04726000  04727000  06465820  06465840  07074090  07502000 *07503000*
         07504000  08533400  08535000 *08760000**08764000* 08767000 *08768000* 08771000 *08772000* 08787000  08789000
         09608000  12414500  12416000  12419500 *12453500**12473160**12698500* 12854000 *14015210* 14113000  14201000
         14233000 *14431512* 14570000 *15113400* 15113500 *15115400* 16117000  16118000 *16123000* 16163200  16178000
         16257000 *16258000* 16854600  16948500 *17904500* 17906150  17906250 *17922000* 18528100  18710300 *18710400*
         18710900  18711100  18740600  18740700  19685580  19768768  20039600  20039700  20039800  20050000  20059400
        *20060400* 20091000  20091300  20091400  20091500  20091600  20091700  20091800 *20110700* 20121800  20125000
         20167900 *20171000**20171100**20171200* 20172100 *20172600**20172700**20173200**20173300**20173800**20173900*
        *20174300* 20175500 *20175700* 20191100  20191300 *20191800* 20192200  20193400 *20195400* 20195600  20196500
         20196800  20196900  22018000  22019000  22022000  22024500  22042100  22356140  22365140  28244010 *28244030*
         30920000  31005100  32000810  32100300  37185350  37195250  37361000  38103600  38201600  38247500  38253500
         38254000  38280000  38280500  38284000  38284500  38285000  38431000  38435000  38441000  38442100  38485000
         38709000  38732300  38806000  41191200  41312400 *41312600* 41313000  41313100  41313200  41313300  41314400
         42501810  42547100  42550500  42551090  44157000  48032150
JARROW  --  REAL ARRAY  --  DECLARED AT 00138000
         02182000  06203600  06203700 *06206000* 06355000  08461000  08462000  08540000  08774000  08791000  09607000
         12414000  12458000  12473100  12473200  14358000  14431490  14431520  15021000  15419000  15426000  16107000
         16116000 *16118200* 16121000  16163000 *16206100**16343950**16689450**16902950**16956000* 17907000  18570000
         19685015  20043700  20105900 *20169600* 20175300 *20176102* 22014500  22017000  22913000  28291200  32000750
         32000810  37353000 *45111000**45131000*
JARROWAREAV  --  DEFINE  --  DECLARED AT 00017380
         20169900
JARSPACE  --  LABEL  --  DECLARED AT 20146700  --  OCCURS AT 20167500
         20164200
JAR9  --  REAL  --  DECLARED AT 14351230
         14351250 *14358710* 14430400  14431425
JOBINFO  --  REAL ARRAY  --  DECLARED AT 12364500
        *12392000**12395500**12408000**12418500**12420500* 12422000 *12422500* 12435500  12438000  12444000  12459000
         12462000  12463000  12464000  12465000  12466000  12474500
JOBKILLED  --  REAL  --  DECLARED AT 22231000
```

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        22241000 *22243000**22251000*
JOBMESS  --  PROCEDURE  --  DECLARED AT 32000000  --  FORWARD AT 00379600
        15602680  32002400  32100350
JOBNUM  --  REAL  --  DECLARED AT 00149000
       *02005000* 02007100  16958600  22041000  22043000  22044000 *22046000* 22400000 *44187000* 48015300  48021000
        48035000  48060000  48074000  48075000 *48078000*
JOBNUMAX  --  DEFINE  --  DECLARED AT 00005000
        02005000  16958600  44151020  44163000
JUNK  --  REAL  --  DECLARED AT 00007000
        04100000  04105500 *04194400**04194500* 04194550  04194600  05847700  05952000  06463986  20756000 *40016410*
        40016500
JUSTRETURN  --  FIELD  --  DECLARED AT 24042590
        24044100
J1  --  INTEGER  --  DECLARED AT 08255200
       *08268600* 08268900
J1  --  STREAM VARIABLE  --  DECLARED AT 08887001
        08890000
J1  --  INTEGER  --  DECLARED AT 20382052
       *20382060**20382062**20382070**20382100* 20382120  20382700
J2  --  INTEGER  --  DECLARED AT 08255200
       *08268700* 08268900
J2  --  STREAM VARIABLE  --  DECLARED AT 08887010
        08890000
J2  --  INTEGER  --  DECLARED AT 20382052
       *20382070**20382110* 20382120  20382700
J3  --  INTEGER  --  DECLARED AT 20382052
       *20382060**20382064**20382070* 20382110  20382720
K  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
        00452700
K  --  REAL  --  DECLARED AT 04553000
       *04655900* 04656200  04657200
K  --  STREAM VARIABLE  --  DECLARED AT 04656200
        04656600
K  --  STREAM VARIABLE  --  DECLARED AT 04712000
K  --  INTEGER  --  DECLARED AT 05702000
       *05705000**05706200**05707000* 05709000  05715000 *05728120* 05728180 *05728240*
K  --  STREAM VARIABLE  --  DECLARED AT 05709000
        05710000
K  --  INTEGER  --  DECLARED AT 05841300
        05841350 *05844920* 05844925 *05844935**05845000*
K  --  INTEGER  --  DECLARED AT 05847700
       *05848300**05850130**05850300* 05851500  05851900  05852350  05852500
K  --  INTEGER  --  DECLARED AT 05952000
       *05961600**05962000**05968400* 05968600 *05971800* 05972400 *05973100**05973600* 05974400  05974600
K  --  STREAM VARIABLE  --  DECLARED AT 07245000
        07249000
K  --  REAL  --  DECLARED AT 07355000
       *07357000* 07372500  07372800  07373000  07374100  07493000  08353000  08404000
K  --  STREAM VARIABLE  --  DECLARED AT 08454000  --  OCCURS AT 08402000
        08455000 *08457000*
K  --  STREAM VARIABLE  --  DECLARED AT 08472000
        08474000
K  --  STREAM VARIABLE  --  DECLARED AT 08775000
        08779000  08921000
K  --  REAL  --  DECLARED AT 09601000  --  OCCURS AT 08920000
       *09618000* 09619000  09620000  09622000
K  --  REAL  --  DECLARED AT 14351205
```

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        *14358340* 14358345 *14358595* 14358600
K   --  STREAM VARIABLE  --  DECLARED AT 14535000
         14537000
K   --  REAL  --  DECLARED AT 15612000
K   --  REAL  --  DECLARED AT 16048000
         16114000  16118000
K   --  REAL  --  DECLARED AT 16349000
K   --  REAL  --  DECLARED AT 16696000
         16696100  16698220 *16809000* 16811000  16823200 *16826900* 16828000
K   --  STREAM VARIABLE  --  DECLARED AT 16823200
         16823400
K   --  REAL  --  DECLARED AT 16911500
         16912000
K   --  REAL  --  DECLARED AT 18198000
        *18232000* 18233000 *18234000* 18240200  18241000  18248000 *18273040* 18273055 *18276000* 18461000
K   --  REAL  --  DECLARED AT 19901500
        *19902150* 19902300 *19903915* 19903960 *19903990* 19904000  19904010  19904020 *19904030**19904050* 19904060
        *19905000* 19905100
K   --  STREAM VARIABLE  --  DECLARED AT 20328000
        *20338000**20343000* 20348000
K   --  REAL  --  DECLARED AT 20382050
        *20382260* 20382280  20382300  20382340  20382360  20382380 *20382440*
K   --  STREAM VARIABLE  --  DECLARED AT 20498000
         20500000
K   --  REAL  --  DECLARED AT 28003600
         28003800
K   --  REAL  --  DECLARED AT 28204000
         28204200  28240200 *28258800* 28259000
K   --  REAL  --  DECLARED AT 28401600
        *28461400* 28462000 *28462400* 28463200  28463400 *28467200* 28467600  28467800 *28471600* 28472000  28472600
        *28475800* 28476400  28478400 *28479600* 28479800  28480000
K   --  REAL  --  DECLARED AT 28803000
         28836500 *28884000* 28885000
K   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
         37357400
K   --  INTEGER  --  DECLARED AT 37388000
         37388100 *37389000* 37391000 *37398000* 37399000
K   --  REAL  --  DECLARED AT 37507000
        *37522000**37527000* 37530100  37531000  37534000  37535000 *37538000*
K   --  REAL  --  DECLARED AT 40004500
         40016400 *40027245**40042100* 40043000 *40073000**40074000**40323500**40323600*
KAPUT  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04684500
         04682950  04687400
KEY  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121450
KEY  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04255000
         04254000  04255000
KEY  --  REAL  --  DECLARED AT 04355400
        *04359600**04365400* 04365600  04366200  04367600  04367800  04368000  04368200  04368800  04369000  04369200
         04369400  04369600  04370000  04376600  04383400  04386800  04393000 *04401000* 04404800  04416400  04421600
KEY  --  STREAM VARIABLE  --  DECLARED AT 04359600
KEY  --  STREAM VARIABLE  --  DECLARED AT 04401000
KEY  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04550000
         04548000  04549000  04555150  04555300  04555350  04555400  04555450 *04555500* 04570100  04651050  04651100
         04651200  04651300  04654000  04654200  04654400  04654500  04654900  04655700  04663000  04663100  04663200
KEY  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41310100
        *41310300* 41310400  41310500  41310700  41310900  41311000
KEY  --  REAL  --  DECLARED AT 41312300
```

```
      *41312700* 41312800  41312900  41313000  41313100  41313200  41313300  41313400 *41314000* 41314100  41314200
       41314400  41314500  41314600  41314700  41314800
KEY -- REAL -- DECLARED AT 41327400
      *41329500* 41333005  41333090
KEYBOARDCOUNTER -- REAL -- DECLARED AT 02020500
      *08998200**08998600**16969500**16970000**44188500**45135215**48131000*
KEYBOARDMASK -- DEFINE -- DECLARED AT 00081000
       45135220
KEYBOARDREADY -- DEFINE -- DECLARED AT 00081000
KEYBOARDREQUEST -- LABEL -- DECLARED AT 00009000 -- OCCURS AT 48128000
       46003000
KEYIN -- REAL PROCEDURE -- DECLARED AT 16904000 -- FORWARD AT 02021000
       02258100  16926270 *16931000**16965500* 16971500  48132000
KEYINBUFFAREAV -- DEFINE -- DECLARED AT 00017470
       16919500
KEYINMASK -- DEFINE -- DECLARED AT 06071100
       06090600
KEYINSCAN -- REAL PROCEDURE -- DECLARED AT 16034900
       16043800  16926010
KEYIN0 -- PROCEDURE -- DECLARED AT 16044000
       16344000  16960500
KEYIN1 -- PROCEDURE -- DECLARED AT 16345000
       16689500  16960500
KEYIN2 -- PROCEDURE -- DECLARED AT 16690000
       16903100  16959500
KEYMSGSZ -- DEFINE -- DECLARED AT 00440000
       08604000  08604100  16041100  16041110
KEY1 -- REAL -- DECLARED AT 04258400
      *04272000* 04352200
KEY1 -- STREAM VARIABLE -- DECLARED AT 04272000
KEY2 -- REAL -- DECLARED AT 04258600
      *04278200* 04278400  04279000  04279800  04280400  04281400  04281600  04281800  04282000  04283000  04283200
       04352400
KILL -- PROCEDURE -- DECLARED AT 02047000
       02130000  04352800  04433600  05979500  06116300  06425000  08573300  12476000  14434000  15116100  16903000
       16971000  20211400  20601250  20610600  22053900  22226000  37465000  41325600  41335100
KILLER -- LABEL -- DECLARED AT 04261200 -- OCCURS AT 04352000
       04317400  04334600
KILLER -- LABEL -- DECLARED AT 04357600 -- OCCURS AT 04433400
       04371955
KILLL -- LABEL -- DECLARED AT 04261200 -- OCCURS AT 04351600
       04298800  04313600
KILLL -- LABEL -- DECLARED AT 04357600 -- OCCURS AT 04433000
       04385400
KILLL -- LABEL -- DECLARED AT 41327800 -- OCCURS AT 41334800
KIND -- REAL -- VALUE PARAMETER -- DECLARED AT 00373000
       00371000  00372000
KIND -- REAL -- NAME PARAMETER -- DECLARED AT 37002000
       37000000 *37046060**37046075**37046320**37046500**37046840**37046950**37047500* 37047605  37047610 *37047650*
      *37173000*
KIND -- INTEGER -- DECLARED AT 38004000
      *38021000*
KIND -- INTEGER -- DECLARED AT 38102400
       38104900  38106700  38106800 *38115100* 38119500  38124000  38144000  38146000 *38157000*
KIND -- INTEGER -- DECLARED AT 38200400
       38202900  38204700  38204800  38215500  38236010  38239500  38242000  38244500  38255500  38258000  38260000
       38263500  38264000  38278500  38279000  38288000  38293000
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KIND  --  INTEGER  --  DECLARED AT 38359000
        38373000
KIND  --  INTEGER  --  DECLARED AT 38544000
        38556000  38581200  38596000
KIND  --  INTEGER  --  DECLARED AT 38652000
        38669000  38681000  38683000  38688000  38697000 *38814000*
KIND  --  STREAM VARIABLE  --  DECLARED AT 38683000
        38684000
KIND  --  INTEGER  --  DECLARED AT 39002000
        39028000  39029000  39034000  39034100 *39092000* 39145100  39233100  39233400 *39235000**39236900**39240000*
       *39293100* 39295000  39306010  39306200
KIND  --  INTEGER  --  DECLARED AT 41002000
       *41052000* 41190000  41190100  41190900  41191000  41191100  41207000
KK  --  REAL ARRAY  --  DECLARED AT 40005050
       *400₁₆410**400₁₆500**400₁₆800**400₁₆900**400₁₆910*
KLUDGE  --  REAL  --  DECLARED AT 41327400
       *41329400* 41329800  41329900
KLUMP  --  DEFINE  --  DECLARED AT 07000000
        07001820  07314200  07327000  07547100  07571000  45137000
KOUNT  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20314200
        20314000  20356000  20368100  20369000  20370000  20374000  20375000  20377000  20378000  20379000  20380000
        20380100  20380200  20380500
KOUNT  --  REAL  --  DECLARED AT 20388000
        20397200  20411000  20415100  20426000  20427000  20432000  20433000  20438000  20439000  20478510  20478520
        20484250  20484300  20498000
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20411000
        20413000  20414000
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20427000
        20428000
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20433000
        20434000
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20439000
        20440000
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20478520
        20478530
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20484300
        20484400
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20498000
        20500100  20500300  20501000
KOUNT  --  REAL  --  DECLARED AT 20566100
        20566900
KOUNT  --  REAL  --  DECLARED AT 20581000
KOUNT  --  REAL  --  DECLARED AT 20584000
        20584200
KOUNT  --  REAL  --  DECLARED AT 20586800
        20587100
KOUNT  --  REAL  --  DECLARED AT 20589800
        20590000  20590655  20590660  20590675  20590680  20590695  20590700
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20590660
        20590665
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20590680
        20590685
KOUNT  --  STREAM VARIABLE  --  DECLARED AT 20590700
        20590705
KOUNT  --  REAL  --  DECLARED AT 20591000
        20591400
KOUNT  --  REAL  --  DECLARED AT 20595000
```

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        20596300
KOUNT  --  REAL  --  DECLARED AT 20596800
KOUNT  --  REAL  --  DECLARED AT 20600010
        20600040  20604100
KOUNT  --  REAL  --  DECLARED AT 20701500
        20706000
KRUNCH  --  DEFINE  --  DECLARED AT 38381000
        38429000
KRUNCH  --  DEFINE  --  DECLARED AT 41018100
KRUNCHER  --  PROCEDURE  --  DECLARED AT 37500000
        38429000
KTR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02111100
KTR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02111200
KTR  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02604000
        02603000  02606000 *02633000*
KTR  --  STREAM VARIABLE  --  DECLARED AT 02606000
        02608000
KTR  --  REAL  --  DECLARED AT 05952210
        05952755  05952975
KTR  --  STREAM VARIABLE  --  DECLARED AT 05952755
        05952765 *05952965*
KTR  --  STREAM VARIABLE  --  DECLARED AT 06078100
        06081600
KTR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07243000
        07245000  07252000
KTR  --  STREAM VARIABLE  --  DECLARED AT 07245000
        07246000
KTR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08679000
        08689900  08690100  08691200 *08692800* 08693800
KTR  --  STREAM VARIABLE  --  DECLARED AT 08691200
        08691400 *08692000*
KTR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08732000
        08730000  08731000  08735000  08737000
KTR  --  STREAM VARIABLE  --  DECLARED AT 08737000
        08738000 *08741000* 08742000 *08748000* 08752000
KTR  --  REAL  --  DECLARED AT 12206500
       *12222500* 12225500 *12244000*
KTR  --  STREAM VARIABLE  --  DECLARED AT 12225500
        12226500
KTR  --  REAL  --  NAME PARAMETER  --  DECLARED AT 16034900
        16036200  16040900  16041200  16043500
KTR  --  REAL  --  DECLARED AT 16048000
       *16075000* 16082000  16088000  16114000  16132000  16139000  16149000  16154000  16168000  16171000  16187000
        16204000  16244000  16251000  16254000  16263100
KTR  --  STREAM VARIABLE  --  DECLARED AT 16088000
        16090000
KTR  --  STREAM VARIABLE  --  DECLARED AT 16139000
        16141000 *16147000*
KTR  --  STREAM VARIABLE  --  DECLARED AT 16187000
        16189000 *16195000*
KTR  --  REAL  --  DECLARED AT 16349000
       *16376000* 16491000  16497000 *16506000* 16520000  16522000  16523000  16526000  16529000  16533000  16536000
        16539000  16542000 *16580800* 16588000  16589000  16592000  16607000  16609200  16610600
KTR  --  STREAM VARIABLE  --  DECLARED AT 16506000
        16508100
KTR  --  STREAM VARIABLE  --  DECLARED AT 16592000
        16594000 *16596000*
```

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KTR  --  STREAM VARIABLE  --  DECLARED AT 16609200
        16609400
KTR  --  REAL  --  DECLARED AT 16693000
        16693500 *16712000* 16741000 *16745500* 16746500  16750000  16751500  16756000  16768000  16780500  16786500
        16797000  16801500  16803000 *16804500* 16805000  16806500  16823200
KTR  --  STREAM VARIABLE  --  DECLARED AT 16756000
        16757000 *16766000*
KTR  --  STREAM VARIABLE  --  DECLARED AT 16780500
        16781000
KTR  --  REAL  --  DECLARED AT 16908500
        16909000 *16926000* 16926010  16926040 *16927000* 16957500  16962000
KTR  --  STREAM VARIABLE  --  DECLARED AT 16926040
        16926050 *16926180*
KTR  --  STREAM VARIABLE  --  DECLARED AT 16962000
        16963000
KTR  --  STREAM VARIABLE  --  DECLARED AT 41323600
        41323700 *41323900*
KTRX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 12201000
        12222000  12222500
KTRX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16044000
        16072000  16073000  16074000  16075000
KTRX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16345000
        16373000  16374000  16375000  16376000  16615200
KTRX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 16690000
        16710500  16711000  16711500  16712000  16830100
KTRX  --  REAL  --  DECLARED AT 16910000
       *16957500* 16959500  16960500
K1  --  INTEGER  --  DECLARED AT 20382052
       *20382060**20382062**20382072* 20382100  20382700
K2  --  INTEGER  --  DECLARED AT 20382052
       *20382060**20382064**20382072* 20382110  20382700
L  --  STREAM VARIABLE  --  DECLARED AT 00042000
        00043000
L  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00316000
L  --  REAL  --  NAME PARAMETER  --  DECLARED AT 00432000
L  --  LABEL  --  DECLARED AT 02117000  --  OCCURS AT 02119020
        02127000  02154000  02163000  02167000
L  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02187300  --  OCCURS AT 02146000
        02187100
L  --  REAL  --  DECLARED AT 02192000
       *02208000* 02210000  02211000  02212000  02216200 *02216300**02216400* 02226000 *02261200* 02261300  02261350
       *02263000* 02264000  02266000  02271000  02281000  02292000  02296000  02313600 *02319000* 02320000  02321000
       *02323000* 02324000  02325000  02232000  02353000
L  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02379000  --  OCCURS AT 02352000
L  --  STREAM LABEL  --  DECLARED AT 02434365  --  OCCURS AT 02434380
        02434380
L  --  STREAM VARIABLE  --  DECLARED AT 02434700
        02434735  02610000
L  --  STREAM VARIABLE  --  DECLARED AT 02662100  --  OCCURS AT 02609000
        02662200
L  --  STREAM VARIABLE  --  DECLARED AT 02664000
L  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02696500
L  --  STREAM LABEL  --  DECLARED AT 04399400  --  OCCURS AT 04400000
L  --  STREAM LABEL  --  DECLARED AT 04647250  --  OCCURS AT 04647400
L  --  REAL  --  NAME PARAMETER  --  DECLARED AT 04702000
        04700000 *04736000* 04736500  04737000
L  --  STREAM VARIABLE  --  DECLARED AT 04737000
```

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          04739000
L  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 05701000
          05700000  05701000  05702500  05715100  05728100  05728120
L  --  INTEGER  --  DECLARED AT 05841615
          *05842450*  05842475  05843200
L  --  INTEGER  --  DECLARED AT 05847700
          *05850130*  05850300  05850400 *05850500**05850600*  05851700  05851800 *05851850*  05852000
L  --  INTEGER  --  DECLARED AT 05952000
          *05961600*  05962000  05962200 *05962400**05962600*  05962900  05963000  05970800  05972600  05973400  05973800
L  --  INTEGER  --  DECLARED AT 06184000
          *06208000**06217100*  06218000  06278000 *06279000*  06280000
L  --  LABEL  --  DECLARED AT 07003280  --  OCCURS AT 07003300
          07003290
L  --  REAL  --  DECLARED AT 07006060
          07034000 *07108000*  07142000  07143000  07147000  07151000 *07152000*  07248000
L  --  LABEL  --  DECLARED AT 07270000  --  OCCURS AT 07274000
          07291000
L  --  LABEL  --  DECLARED AT 07300000  --  OCCURS AT 07316000
          07320000
L  --  LABEL  --  DECLARED AT 07356000  --  OCCURS AT 07358000
          07372900
L  --  DEFINE  --  DECLARED AT 07387000
          07395000  07396000
L  --  LABEL  --  DECLARED AT 07423000  --  OCCURS AT 07435000
          07451000
L  --  STREAM LABEL  --  DECLARED AT 08300600  --  OCCURS AT 08301200
          08300800  08349000  08400000
L  --  STREAM LABEL  --  DECLARED AT 08455500  --  OCCURS AT 08457000
          08491000
L  --  REAL  --  DECLARED AT 08568200  --  OCCURS AT 08490000
          08568900  08569600  08569700  08569900  08569910  08572500  08572510  08572520  08572600  08572700  08573200
L  --  STREAM VARIABLE  --  DECLARED AT 08568900
L  --  STREAM VARIABLE  --  DECLARED AT 08572700
L  --  STREAM LABEL  --  DECLARED AT 08663000  --  OCCURS AT 08664000
L  --  STREAM LABEL  --  DECLARED AT 08690110  --  OCCURS AT 08690110
L  --  REAL  --  DECLARED AT 09601000  --  OCCURS AT 08806000
          09618000  09621000 *09622000*
L  --  STREAM VARIABLE  --  DECLARED AT 14284000
          14286000  14287000
L  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14543000
          14583100  14583200  14607000
L  --  STREAM LABEL  --  DECLARED AT 14646600  --  OCCURS AT 14646800
          15027000
L  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15169000  --  OCCURS AT 15025000
          15168000  15168100  15173000  15174000  15176000  15177000  15180000  15182000  15186000
L  --  REAL  --  DECLARED AT 15612000  --  OCCURS AT 15531400
          *15614000*  15615000  15617000  15620000  15621000
L  --  STREAM LABEL  --  DECLARED AT 16036800  --  OCCURS AT 16037500
          16043100  16515000  16758500  16926110
L  --  STREAM LABEL  --  DECLARED AT 16926240  --  OCCURS AT 16926240
L  --  STREAM VARIABLE  --  DECLARED AT 17003300
          17003800  17004150  17004250
L  --  REAL  --  DECLARED AT 20012100  --  OCCURS AT 18540800
          20030800 *20035300*  20035500  20035700  20036100  20036200 *20058100*  20058300  20058800  20059400  20059600
          20061500  20064600
L  --  STREAM VARIABLE  --  DECLARED AT 20030800
          20032750  20063000
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L  --  STREAM LABEL  --  DECLARED AT 20064600  --  OCCURS AT 20064800
L  --  REAL  --  DECLARED AT 20081300
       *20119000* 20119900  20120000  20120100  20120800
L  --  REAL  --  DECLARED AT 20141700
       *20159500**20163900**20168150**20176102*
L  --  STREAM LABEL  --  DECLARED AT 20301200  --  OCCURS AT 20301500
L  --  LABEL  --  DECLARED AT 20382030  --  OCCURS AT 20382740
        20382620
L  --  STREAM LABEL  --  DECLARED AT 20571840  --  OCCURS AT 20571850
L  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22083000
        22095000  22110000  22115070  22192100
L  --  STREAM LABEL  --  DECLARED AT 22192100  --  OCCURS AT 22192200
L  --  STREAM LABEL  --  DECLARED AT 24118000  --  OCCURS AT 24120000
L  --  STREAM VARIABLE  --  DECLARED AT 24158000
        24160000
L  --  LABEL  --  DECLARED AT 24209000  --  OCCURS AT 24221000
        24226000
L  --  REAL  --  DECLARED AT 28003800
L  --  REAL  --  DECLARED AT 28401600
       *28447600* 28447800  28448000  28448400  28448800  28449000 *28449600**28472400* 28473200 *28473400* 28473600
L  --  LABEL  --  DECLARED AT 30906000  --  OCCURS AT 30915000
        30913000
L  --  LABEL  --  DECLARED AT 36003000  --  OCCURS AT 36006000
        36008000
L  --  REAL  --  DECLARED AT 37359000
       *37360000* 37361000  37382000  37383000
L  --  STREAM VARIABLE  --  DECLARED AT 37361000
       *37365000* 37366000 *37367000**37368000* 37369000 *37370000**37371000* 37375000 *37379500*
L  --  STREAM VARIABLE  --  DECLARED AT 37394200
        37394350  37394550
L  --  STREAM VARIABLE  --  DECLARED AT 38290000
        38290500
L  --  STREAM VARIABLE  --  DECLARED AT 38593000
L  --  STREAM LABEL  --  DECLARED AT 41333037  --  OCCURS AT 41333045
L  --  LABEL  --  DECLARED AT 41430500  --  OCCURS AT 41430700
        41430600
L  --  LABEL  --  DECLARED AT 42483000  --  OCCURS AT 42503000
        42496000
LA  --  STREAM LABEL  --  DECLARED AT 02621000  --  OCCURS AT 02623000
LA  --  INTEGER  --  DECLARED AT 05951900
       05952200 *05953035* 05953040 *05962700* 05962800 *05962900* 05969000  05970800  05972800  05973400 *05976350*
       05976400  05976450  05976700  05977050 *05977100* 16754000
LA  --  STREAM LABEL  --  DECLARED AT 37316300  --  OCCURS AT 37316400
LAB  --  STREAM LABEL  --  DECLARED AT 08455000  --  OCCURS AT 08456000
LAB  --  REAL ARRAY  --  DECLARED AT 28004600
       28004800  28019800  28022400  28022600  28025200  28033400 *28033800* 28036400  28039200  28039400  28048400
       28056000  28058200  28063000  28063200  28063800  28064000  28099800  28100200
LAB  --  REAL ARRAY  --  DECLARED AT 28205000
       28205200  28213000  28217000  28217200  28219800  28222600 *28223000* 28225400  28228200  28228400  28272400
LAB  --  REAL ARRAY  --  DECLARED AT 28401800
      *28451800*
LABE  --  LABEL  --  DECLARED AT 20597850  --  OCCURS AT 20609500
        20598000
LABELA  --  REAL ARRAY  --  DECLARED AT 04668800
      *04674000**04675400**04675450**04675500* 04679050  04679500  04680350 *04680900* 04680950
LABELARFA  --  SUBROUTINE  --  DECLARED AT 38106900
        38129000
```

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LABELAREA  --  SUBROUTINE  --  DECLARED AT 38204900
        38275000
LABELAREAV  --  DEFINE  --  DECLARED AT 00017564
        02639000  28451800  38107100  38121500  38148000  38205100
LABELASCRATCH  --  REAL PROCEDURE  --  DECLARED AT 02659000
       *02669000* 02670000  04680950  07090000  28073000  28084000
LABELCHECK  --  REAL SUBROUTINE  --  DECLARED AT 28019200
        28026800  28029400  28048200
LABELCHECK  --  REAL SUBROUTINE  --  DECLARED AT 28212400
        28221400  28271000
LABELFD  --  DEFINE  --  DECLARED AT 04670800
        04674350  04678950  04680250
LABELREC  --  REAL  --  DECLARED AT 08099750
       *08112000* 08112050  08112200  08116400
LABELSOMITTED  --  DEFINE  --  DECLARED AT 15072000
LABELSPACE  --  SUBROUTINE  --  DECLARED AT 01250600
        01250900  01254800
LABELTABLE  --  REAL ARRAY  --  DECLARED AT 00285000
       *01261100**02199000* 02347290 *02347315* 02434195  02434200 *02434260* 02434270 *02434400* 02434410 *02434690*
        02434700  04369000  04675500 *04680150**06463740**07015000* 07372300  07372310 *07409100**07432100**07448000*
        07478000  07478100  08014000  08018000 *08029100**08030400**08031100**08033994**08050000**08054000**08085000*
       *08091000**08256440* 08257500  08257600  08258000 *08259820**08259850* 08269510 *08280030* 08422000 *08430000*
        08447000  08471105  08497000  08550000  08557000 *08565000* 08581000 *08582000**12529500**12539000**12567500*
        12669500  12670250 *12671250* 12679500  12687300 *12687700**12864500**12874500**12876000**16216000* 20590300
       *20590450* 20590550 *20590600**20595650**20596200**20596350**20601100**20608840**20609100**20609580**22069470*
        22081000 *22083000* 22091000  22093000 *22125000**22175000**22179000* 22189000 *22190000**22200000**22212200*
        28016000  28248600 *28255600* 37010000  37011000  37015000  37016000  37019200  37022100  37025000  37032000
       *37037100* 37041000 *37046160**37046320**37046835**37046980**37047500**37047625**37048310* 37100000 *37174000*
        37187110  37189000  37189500  37190000  37200000  37235000  37235500 *37236000* 37236750 *37241900* 37314000
       *37318100**37319000**38640000**38730000* 44175000 *44195000**44196000**44214400*
LABELTHEPRINTER  --  SUBROUTINE  --  DECLARED AT 08256430
        08258700  08271000
LABEV  --  DEFINE  --  DECLARED AT 20227000
        20595850  20597050
LABLE  --  REAL  --  DECLARED AT 31005000
       *31013000* 31013050  31013100  31014000  31015000  31017000 *31017100* 31017300  31017400  31021000
LABLE  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 37341000
        37337000  37339000  37346000  37352000  37353000
LABLE  --  STREAM VARIABLE  --  DECLARED AT 37346000
LABLE  --  REAL ARRAY  --  DECLARED AT 37450000
       *37454000* 37455000  37456000  37463000
LASTACCESSDATE  --  DEFINE  --  DECLARED AT 08100950
        08105900  08114300
LASTAVAIL  --  DEFINE  --  DECLARED AT 40008110
        40078052  40078054
LASTCDNUM  --  INTEGER  --  DECLARED AT 07000100
       *07001660* 07001680  07559500
LASTDECK  --  REAL  --  DECLARED AT 07000300
       *07314120**07326100* 07564000  07566000 *07570000*
LASTENTRY  --  REAL  --  DECLARED AT 41327500
       *41330200**41331400* 41332300  41333500  41333800
LASTIO  --  DEFINE  --  DECLARED AT 38385500
        38389200
LASTL  --  INTEGER  --  DECLARED AT 41316410
       *41317500**41317700**41319000* 41319160  41319200  41319220  41319240  41319300  41319700
LASTL  --  REAL  --  DECLARED AT 44012000
        44014000 *44115000* 44123000  44124000 *44125000* 44126000  44130000 *44131000*
```

```
LASTL  --  REAL  --  DECLARED AT 44206800
        44207000
LASTL  --  REAL  --  DECLARED AT 45002100
        45002600
LASTLINK  --  INTEGER  --  DECLARED AT 08852000
       *08860000**08863000* 08931000  08932000  08933000  08935000
LASTPASSED  --  REAL  --  DECLARED AT 08853000
       *08862000**08882000* 08885000  08911000  08927000
LASTSCAN  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20314200
        20314000  20322000  20323000 *20324000**20325100**20371000* 20374410 *20376000*
LASTSCAN  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20386000
        20384000  20397200
LASTSCAN  --  REAL  --  DECLARED AT 20566100
        20566900
LASTSCAN  --  REAL  --  DECLARED AT 20581000
LASTSCAN  --  REAL  --  DECLARED AT 20584000
        20584200
LASTSCAN  --  REAL  --  DECLARED AT 20586800
        20587100
LASTSCAN  --  REAL  --  DECLARED AT 20589800
        20590000
LASTSCAN  --  REAL  --  DECLARED AT 20591000
        20591400
LASTSCAN  --  REAL  --  DECLARED AT 20595000
        20596300
LASTSCAN  --  REAL  --  DECLARED AT 20596800
LASTSCAN  --  REAL  --  DECLARED AT 20600010
        20600040  20600110 *20600150**20602540* 20604900  20605100 *20607000**20608780*
LASTSCAN  --  REAL  --  DECLARED AT 20701500
        20706000
LATEST  --  DEFINE  --  DECLARED AT 28207800
        28283200
LATESTV  --  DEFINE  --  DECLARED AT 20247960
        20569650
LB  --  LABEL  --  DECLARED AT 02202000  --  OCCURS AT 02293000
        02310000
LB  --  DEFINE  --  DECLARED AT 20217700
        20380200  20570000  20573510
LBACK  --  LABEL  --  DECLARED AT 20393000  --  OCCURS AT 20469000
        20395000
LBI  --  LABEL  --  DECLARED AT 02202000  --  OCCURS AT 02308000
        02311000
LBL  --  REAL  --  DECLARED AT 02638000
       *02639000* 02642000  02657000
LBL  --  STREAM VARIABLE  --  DECLARED AT 02642000
LBL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02659000
       *02662000* 02662050  02662100  02663000  02664000  02665110  02665150  02666000  02668600
LBL  --  REAL ARRAY  --  DECLARED AT 20013800
        20014300  20021900 *20021920* 20022000 *20022100* 20022200  20059100 *20059120* 20059300  20059700  20060400
        20060800  20061100  20063700  20064000  20065200  20066200
LBL  --  REAL ARRAY  --  DECLARED AT 20083000
        20083500  20089800 *20089820* 20089900 *20090000* 20090100
LBL  --  REAL ARRAY  --  DECLARED AT 20143400
        20143900  20210700
LBL  --  REAL ARRAY  --  DECLARED AT 28004800
        28011850  28041400 *28072800* 28073000 *28081200* 28081400  28081600  28082200 *28083000* 28083200  28084000
       *28094800* 28095000
```

```
LBL  --  STREAM VARIABLE  --  DECLARED AT 28083200
LBL  --  REAL ARRAY  --  DECLARED AT 28205200
        28232600  28255200  28255600  28256400
LBL  --  REAL ARRAY  --  DECLARED AT 28401800
LBLEQNAREAV  --  DEFINE  --  DECLARED AT 00017290
        20059120  20089820
LBMESS  --  PROCEDURE  --  DECLARED AT 17000000  --  FORWARD AT 00454000
        14585360  16811500  16817000  16818000  18031500  18439125  20575050  20575100  20575200  20575550  20577450
        20577750  20577875  20577975  20578125  20578525  20585370  20587550  20588900  20594350  20704270  20766000
        20769400  20771100  28011200  28212000  28270820  28408400  28434800  28474600  28883000  44253000
LBMSGCONTROL  --  REAL  --  DECLARED AT 16995000
       *17000900* 17001000  17001400 *17002600* 17003000 *17003050* 17003100  17003130  17003250  17003400 *17005600*
LC  --  DEFINE  --  DECLARED AT 08100650
        08101650
LC  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16743000
        16703500
LCOPY  --  LABEL  --  DECLARED AT 20393000  --  OCCURS AT 20478510
        20396000  20449100  20461310  20461810  20470100  20475100
LCOPY  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20569200
        20566620
LCOPY  --  LABEL  --  DECLARED AT 20597800  --  OCCURS AT 20606450
        20597950
LD  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16535000
        16365000
LDATE  --  INTEGER  --  DECLARED AT 41316410
        41316520  41317780  41319900  41320410  41320430  41320440  41321900  41323170  41324300
LDATE  --  REAL  --  DECLARED AT 44012000
LDATE  --  REAL  --  DECLARED AT 44206800
LDATE  --  REAL  --  DECLARED AT 45002100
       *45105000* 45116000
LDCNTRL  --  LABEL  --  DECLARED AT 07244100  --  OCCURS AT 07265400
        07256000  07258200
LDCNTRL  --  LABEL  --  DECLARED AT 22061200  --  OCCURS AT 22069550
        22069030  22069140
LDCNTRLCODE  --  DEFINE  --  DECLARED AT 00134020
        07258600  20152300  20605465  22069160
LDISK  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20456000
        20394900
LDUMMY  --  LABEL  --  DECLARED AT 20392870  --  OCCURS AT 20451900
        20394070  02623501
LE  --  LABEL  --  DECLARED AT 44020000  --  OCCURS AT 44120000
        44133000
LEAPFROG  --  STREAM VARIABLE  --  DECLARED AT 04658700
       *04659700* 04662200
LEAVE  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04427600
        04403400
LEAVELKD  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18466100
        18220000
LEFTARROW  --  DEFINE  --  DECLARED AT 00006150
        02615100  02615300  08102700  08115600  19768778
LEFTOFF  --  REAL  --  DECLARED AT 00341000
       *24030000* 24036700  24036900 *24037500* 24037600  24038200 *24038400*
LEM  --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20026100
        20025000  20025600
LEND  --  STREAM LABEL  --  DECLARED AT 12883500  --  OCCURS AT 12884500
LEVEL  --  INTEGER  --  DECLARED AT 08852000
       *08861000* 08864000 *08882000* 08887001  08931000  08932000 *08937000* 08938000  08939000  08942000  08944000
```

```
        08944500
LEVEL  --  REAL  --  DECLARED AT 20012500
        20021400  20021700 *20024600* 20025000  20030800  20036800
LEVEL  --  REAL  --  DECLARED AT 20081700
        20089300  20089600
LEVEL  --  REAL  --  DECLARED AT 20142100
        20164700
LF  --  DEFINE  --  DECLARED AT 08100700
        08101650  08102000  08102050  08102700  08105450
LF  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16742000
        16703500
LF  --  LABEL  --  DECLARED AT 44020000  --  OCCURS AT 44126000
        44128300
LFORM  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20452000
        20394000
LFREE  --  LABEL  --  DECLARED AT 20393000  --  OCCURS AT 20478500
        20396010  20461050  20461650  20467100  20473100
LFT  --  INTEGER  --  DECLARED AT 02133123
        02173297  02173300
LI  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16386000
        16363000
LIBBIT  --  DEFINE  --  DECLARED AT 00417060
LIBERR  --  DEFINE  --  DECLARED AT 00416590
        20511420  20575050  20575100  20575200  20575600  20577475  20577775  20577925  20585375  20587550  20588900
        20594350
LIBMAINCODE  --  DEFINE  --  DECLARED AT 00134020
        08887010  15113500  20566760  20587310  20605430  22042100
LIBMSG  --  DEFINE  --  DECLARED AT 00416200
        06353551  07351000  18439125  20578550  28264600  28270820
LIBNO  --  REAL  --  DECLARED AT 20566100
        20566690 *20566695* 20566812  20566820  20566825 *20566850* 20567325  20567330  20567350 *20569400* 20569460
        20569890  20572300  20573100 *20576050* 20580100 *20580305* 20580310
LIBNO  --  REAL  --  DECLARED AT 20581000
        20582650
LIBNO  --  REAL  --  DECLARED AT 20584000
LIBNO  --  REAL  --  DECLARED AT 20586800
LIBNO  --  REAL  --  DECLARED AT 20589800
LIBNO  --  REAL  --  DECLARED AT 20591000
LIBNO  --  REAL  --  DECLARED AT 20595000
LIBNO  --  REAL  --  DECLARED AT 20596800
LIBNO  --  REAL  --  DECLARED AT 20600010
       *20603500*
LIBNO  --  REAL  --  DECLARED AT 20701500
LIBRA  --  DEFINE  --  DECLARED AT 20236000
        20581250  20585700
LIBRARYCOPY  --  PROCEDURE  --  DECLARED AT 28400000  --  FORWARD AT 00480000
        19681100  28483400
LIBRARYHELP  --  PROCEDURE  --  DECLARED AT 28000000
        28101400  28216800  28225200  28228600  28230400  28232800  28242200  28242600  28243600  28244040  28246200
        28254600  28257800  28258700  28262400  28266800  28268000  28268400  28270824  28271000  28285400  28295800
        28303600  28465800  28467400  28472800  28475600  28476200
LIBRARYTRANSFER  --  PROCEDURE  --  DECLARED AT 28200000
        28246000  28308000  28455000  28482800
LIBRARYZERO  --  PROCEDURE  --  DECLARED AT 28800000  --  FORWARD AT 00479500
        19681000
LIMIT  --  REAL  --  DECLARED AT 04554500
       *04605500* 04627000 *04633200*
```

```
LIMIT -- INTEGER -- DECLARED AT 24109000
        24146000 *24152000* 24155000  24158000
LIN -- STREAM LABEL -- DECLARED AT 12662000 -- OCCURS AT 12662500
LINDX -- REAL -- DECLARED AT 20017000
        20017100 *20060900* 20061100  20063700  20064000  20065200
LINECT -- DEFINE -- DECLARED AT 13021900
        13128010
LINES66 -- DEFINE -- DECLARED AT 20240020
LINK -- DEFINE -- DECLARED AT 06070500
        06087600  06087900  06100500
LINK -- REAL -- DECLARED AT 08172000
        *08174000* 08176000
LINK -- REAL -- DECLARED AT 12354000
        *12387500* 12389000  12390000  12390500  12397000
LINK -- DEFINE -- DECLARED AT 14160000
        14184000  14189000  14190000
LINK -- INTEGER -- DECLARED AT 14351100
        *14399100* 14399200  14399300 *14399500*
LINK -- REAL -- DECLARED AT 15600300
        *15601200* 15601400  15601500  15601600  15602200  15602640  15602680
LINK -- REAL -- DECLARED AT 20017100
        20017200 *20058300* 20058900  20059400  20059600 *20059700*
LINK -- REAL -- DECLARED AT 22230000
        *22295000* 22296000  22297000  22303000  22386000  22386100
LINK -- REAL -- DECLARED AT 24004000
        *24006000* 24007000  24009000
LINK -- REAL -- DECLARED AT 24032200
        *24033100* 24033200 *24033300* 24033400  24033700 *24034200**24034400* 24034500  24035200 *24035300* 24035400
        *24036300**24036700* 24037000  24038000  24038400  24038800  24038900  24039500  24039600
LINK -- LABEL -- DECLARED AT 37388300 -- OCCURS AT 37412000
        37416000
LINKIT -- SUBROUTINE -- DECLARED AT 19900290
        19900460  19900570  19900650
LINKUP -- PROCEDURE -- DECLARED AT 41310100 -- FORWARD AT 04121450
        04283200  04370000  04555450  04651300  04654200  04654500  04663200  05953050  08385500  08412400  14411900
        16604000  19685370  41311200  41313400  41314800  41323180  41325500
LISTHECARD -- SUBROUTINE -- DECLARED AT 20600100
        20600510  20603360  20604480  20606875
LL -- STREAM LABEL -- DECLARED AT 04360400 -- OCCURS AT 04362200
        04360600
LL -- STREAM LABEL -- DECLARED AT 05953020 -- OCCURS AT 05953025
        08291250  08291400
LL -- STREAM LABEL -- DECLARED AT 08299600 -- OCCURS AT 08300200
LL -- LABEL -- DECLARED AT 14547000 -- OCCURS AT 14551000
        14556500
LL -- STREAM VARIABLE -- DECLARED AT 15501500
        15502800
LL -- STREAM LABEL -- DECLARED AT 16595000 -- OCCURS AT 16596000
        16764000
LL -- LABEL -- DECLARED AT 18202000 -- OCCURS AT 18227000
        18229500  20054400
LL -- STREAM VARIABLE -- DECLARED AT 20289390 -- OCCURS AT 20053500
        20289455
LL -- STREAM LABEL -- DECLARED AT 41323800 -- OCCURS AT 41323900
LL -- STREAM VARIABLE -- DECLARED AT 44203000
        44205000
LLINES66 -- LABEL -- DECLARED AT 20392880 -- OCCURS AT 20465050
```

```
        20394080
LL0  --  STREAM LABEL  --  DECLARED AT 04362800  --  OCCURS AT 04363200
LL0  --  STREAM LABEL  --  DECLARED AT 06075000  --  OCCURS AT 06075100
        12239000  12241500
LL1  --  STREAM LABEL  --  DECLARED AT 04362800  --  OCCURS AT 04363400
LL1  --  STREAM LABEL  --  DECLARED AT 06075400  --  OCCURS AT 06075700
        06075500
LL1  --  STREAM LABEL  --  DECLARED AT 12233000  --  OCCURS AT 12234000
        12234000
LL2  --  STREAM LABEL  --  DECLARED AT 04362800  --  OCCURS AT 04363600
LL2  --  STREAM LABEL  --  DECLARED AT 06075000  --  OCCURS AT 06075800
LL3  --  STREAM LABEL  --  DECLARED AT 06076500  --  OCCURS AT 06076700
LN  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16780000
        16704000
LN  --  LABEL  --  DECLARED AT 44020000  --  OCCURS AT 44138000
        44141000
LNO  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20454000
        20394900
LNUM  --  STREAM VARIABLE  --  DECLARED AT 07001680
        07001720
LO  --  REAL  --  DECLARED AT 06068300
        06068400  06092800 *06111500*
LO  --  REAL  --  DECLARED AT 37180000
        37180400 *37187100* 37187110  37187120  37187130 *37187250* 37188500  37195200 *37195250* 37195280 *37195300*
       *37195400**37195700* 37212000  37213000 *37251000**37264000**37267000**37267100*
LO  --  INTEGER  --  DECLARED AT 40005110
       *40016025**40016026* 40016900  40016920 *40322442* 40322444 *40328000**40329000* 40330000
LOAD  --  LABEL  --  DECLARED AT 20146600  --  OCCURS AT 20169400
        20167900
LOAD  --  DEFINE  --  DECLARED AT 20224500
        20566807  20566822  20603000
LOC  --  INTEGER  --  DECLARED AT 00026000
       *00039035* 00040000  00042000  00045000  00046000  00048000
LOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00092000
        00090000  00091000
LOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02052500
LOC  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 02697770
        02697750  02697770
LOC  --  REAL  --  DECLARED AT 09602100
LOC  --  REAL  --  DECLARED AT 12354500
       *12386500* 12387500 *12397000*
LOC  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 14107000
        14105000  14106000 *14112000* 14113000  14117000
LOC  --  REAL  --  DECLARED AT 14158000
        14183000 *14187000* 14188000  14189000 *14190000**14198800**14203020* 14206000  14206320  14208000  14209200
        14209300  14211000  14212000  14212010  14212100  14212300  14213000  14216000  14217000  14218025  14218030
        14220000 *14222000**14248000* 14254000  14255000  14256000 *14258000* 14260000 *14281000* 14284000  14292000
        14292140  14296000  14297000
LOC  --  REAL  --  DECLARED AT 14624550
       *14675000* 14676000  14679000 *14683000* 14687000 *14699000* 14700000  14702000  14702600  14703100 *14712450*
        14712510 *14712800*
LOC  --  REAL  --  DECLARED AT 15536000
       *15546000* 15548000  15550000  15552800
LOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 18002000
        18000000  18001000  18017000  18020000  18021500  18022000  18035000  18047500  18063000  18075000  18075500
LOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 22229000
        22228000  22229000  22295000  22296000
```

```
LOC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24002000
        24000000  24001000 *24005000* 24006000  24007000  24009000  24010000  24017000  24023000  24024000  24026000
        24027000  24028000  24030000
LOC  --  REAL  --  DECLARED AT 24032200
       *24033200* 24033300  24033600  24034300  24034400  24035100  24035200  24035600  24035800 *24039000* 24039200
        24039300 *24039700* 24039900  24041900
LOC  --  REAL ARRAY  --  DECLARED AT 24104000
        24126000 *24143000**24146000* 24152000  24153000  24158000
LOC  --  REAL ARRAY  --  DECLARED AT 24208000
        24213000 *24214000* 24221000  24222000 *24223000**24224000* 24225000
LOC  --  REAL  --  DECLARED AT 44012000
       *44116000* 44117000  44119000  44122000  44123000  44124000  44125000 *44126000* 44128200  44130000  44131000
       *44134000**44136000* 44137000 *44138000* 44139000  44140000
LOC  --  REAL  --  DECLARED AT 44206800
LOC  --  REAL  --  DECLARED AT 45002100
        45002200
LOCALEVEL  --  DEFINE  --  DECLARED AT 00005050
        15501500  20289390  44203000
LOCAT  --  REAL ARRAY  --  DECLARED AT 37387000
        37388200 *37391000* 37393000  37394000  37394150  37394250  37395000
LOCAT  --  STREAM VARIABLE  --  DECLARED AT 37395000
        37396000
LOCATION  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 04042000
        04040000  04041000  04045100  04048800  04061000
LOCATIONS  --  STREAM VARIABLE  --  DECLARED AT 07003462
        07003490  07003494  07003502
LOCATQUE  --  REAL ARRAY  --  DECLARED AT 00174000
        02063000  02064000  02065100 *02067000* 02079000  02089000  02097400  04025000 *04059000**04061000* 04118000
        04137110  04137170  04151220  04151230  04178000  04180000  04190000  04194700 *04224500* 04225000  04228000
        04230000  04279400  04282000  04284200  04284400  04284600 *04299200* 04310400  04312400  04316800  04317000
       *04351800* 04366600  04367000  04372000  04372050  04421800  04426600  04429400  04431200 *04433200**04561000*
        04569100 *04671800**04685300* 04685400  37327000 *37328000* 37334000  44170000
LOCIOD  --  REAL  --  NAME PARAMETER  --  DECLARED AT 06002000
        06000000  06017000 *06019000*
LOCIOD  --  REAL  --  DECLARED AT 06068800
       *06098600* 06099000  06099100  06099200
LOCK  --  DEFINE  --  DECLARED AT 38384000  --  OCCURS AT 08110750
        38419000  38426000  38503000  38518000
LOCK  --  DEFINE  --  DECLARED AT 38566000
        38581100
LOCK  --  DEFINE  --  DECLARED AT 38677000
        38782000
LOCK  --  DEFINE  --  DECLARED AT 41021000
        41190700
LOCKCONTROLDECKS  --  DEFINE  --  DECLARED AT 07001000
        07001640  07272500  07301000  07371300  07426000
LOCKDIRECTORY  --  DEFINE  --  DECLARED AT 00421100
        06103500  07562000  08268000  14560000  14588100  18033000  18273000  18425400
LOCKED  --  DEFINE  --  DECLARED AT 06070700
        06089100  06099400
LOCKED  --  SUBROUTINE  --  DECLARED AT 40100000
        40101600  40292050
LOCKPTR  --  REAL  --  DECLARED AT 19900250
        19900300  19900330  19900370  19900420 *19900470**19900480* 19900520
LOCKSYS  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18401000
        18220000
LOCKTOG  --  DEFINE  --  DECLARED AT 00079200
```

```
        02434490  05842300  05849300  05960700  06103500  06103700  07001640  07272500  07301000  07371300  07426000
        07562000  08268000  08379000  08571100  08628000  08689300  08830000  08880000  09617000  09638000  09680100
        14379000  14560000  14588100  18033000  18273000  18425400  18841500  18844100  19768800  20035000  20119700
        20150900  20582450  22010000  22906000  24043100  41320320
LOCKV  --  DEFINE  --  DECLARED AT 20219100
        20511665
LOCN  --  REAL ARRAY  --  DECLARED AT 04103000
       *04104000* 04105650  04105850  04106000  04108000
LOCN  --  NAME  --  DECLARED AT 04127000
       *04230000* 04232000 *04233000* 04234000
LOCN  --  NAME  --  DECLARED AT 04260800
       *04312400**04312800* 04313000
LOCN  --  NAME  --  DECLARED AT 04356800
       *04431200**04431600* 04431800
LOCN  --  STREAM VARIABLE  --  DECLARED AT 12225000
       *12240000* 12241500 *12242000*
LOCN  --  REAL  --  DECLARED AT 16698220
       *16851200* 16851500  16851700  16852100  16853500 *16853600**16853700* 16854300
LOCN  --  REAL  --  DECLARED AT 41327700
       *41329200* 41329400 *41329800* 41329900  41330100  41330600  41330700  41331900  41332300 *41332500*
LOG  --  NAME  --  DECLARED AT 06183000
       *06189000**06192000**06194000**06194900* 06195110  06195115  06195120 *06198000**06199000**06201000**06202100*
       *06203000* 06205030  06205040 *06210000* 06211000  06214000  06216000  06217100 *06220000**06222000**06223000*
       *06226000**06230100**06232000* 06234000  06236000 *06237000**06238000* 06241100 *06241200* 06243100  06247000
       *06249000**06253500* 06254000  06255000  06262000 *06265000* 06269000  06280000  06329000
LOG  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09712000
        09704100  09705000
LOG  --  REAL ARRAY  --  DECLARED AT 15613000
       *15620000**15621000**15623000**15624000**15625000* 15626000  15627000
LOG  --  STREAM LABEL  --  DECLARED AT 18820800  --  OCCURS AT 18821000
LOGANOTHER  --  LABEL  --  DECLARED AT 41327800  --  OCCURS AT 41329100
        41334700
LOGAREAV  --  DEFINE  --  DECLARED AT 00017570
        06210000  12848500
LOGCOMMENT  --  PROCEDURE  --  DECLARED AT 15610000
        16607000
LOGENTRY  --  REAL  --  DECLARED AT 04121300
       *04137120**41310400* 41317500 *41317600**41319000**41319080**41319100* 41330500 *41330700**41331000**41331100*
        41332300  41333500 *44188200*
LOGFREE  --  REAL  --  DECLARED AT 00425000
       *05703500* 05704000  05722000  05724000  05728000  05728180 *05729300* 06263100  08569300 *08569400**08570000*
        08570800 *08570870**45092370*
LOGHOLDER  --  REAL  --  DECLARED AT 04121200
        04137230 *04137250* 04137270 *04137280* 41310600 *41310700* 41310900 *41311000* 41319020  41329200 *41329800*
       *41329900* 41333000  41333100  41334400 *41334700**41334900* 41335000 *44188200*
LOGICLRC  --  INTEGER  --  DECLARED AT 04668450
       *04677450* 04685750
LOGINFO  --  REAL ARRAY  --  DECLARED AT 12502500
        12506000  12536500  12540000 *12696000**12696500* 12697000  12697500 *12698500**12699000**12699500**12700000*
       *12700500* 12701500 *12702000* 12703500  12704000
LOGINFO  --  REAL ARRAY  --  DECLARED AT 12802500
       *12848500**12850500* 12851000 *12852000**12852500**12853000**12853500**12854000**12854500**12855000**12855500*
       *12856000**12856500**12857000**12857500**12858000**12858500**12859000**12859500**12860000* 12887000
LOGINFO  --  REAL ARRAY  --  DECLARED AT 13003000
       *13128010*
LOGOUT  --  PROCEDURE  --  DECLARED AT 08568000  --  FORWARD AT 05606900
        05706100  16783000
```

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LOGOUTMAINT  --  PROCEDURE  --  DECLARED AT 41316000  --  FORWARD AT 04121600
        16784500  41325700  41330600  45135600
LOGSIZE  --  REAL  --  DECLARED AT 04121170
        41316590 *41318240**41318610* 41318780  41318880  41330200
LOGSPACE  --  PROCEDURE  --  DECLARED AT 05700000
        05730000  06280000  12703500  15626000
LOGVERSION  --  DEFINE  --  DECLARED AT 04121710
        41320100  41322100  41334100
LOK  --  STREAM VARIABLE  --  DECLARED AT 15550000
        15552000
LOK  --  REAL  --  DECLARED AT 20702100
        20703000 *20744000**20748000* 20765000
LOOK  --  LABEL  --  DECLARED AT 06462200  --  OCCURS AT 06463200
        06463780
LOOK  --  LABEL  --  DECLARED AT 37180500  --  OCCURS AT 37188500
        37195450  37195700
LOOK  --  LABEL  --  DECLARED AT 39009000  --  OCCURS AT 39095000
        39093500
LOOKATDKB  --  LABEL  --  DECLARED AT 40008050  --  OCCURS AT 40249300
LOOKFORTAPE  --  REAL SUBROUTINE  --  DECLARED AT 12534500
        12541500  12547500  12622500  12717000
LOOKFORTAPE  --  DEFINE  --  DECLARED AT 13022000
        13070000
LOOKOUT  --  LABEL  --  DECLARED AT 39009000  --  OCCURS AT 39155000
        39092080  39092185  39094500
LOOKQ  --  REAL  --  DECLARED AT 06179200
LOOK4TAPE  --  LABEL  --  DECLARED AT 12514000  --  OCCURS AT 12622000
        12515000
LOOP  --  STREAM VARIABLE  --  DECLARED AT 04658700
        04660100  04660300 *04660500* 04660600
LOOP  --  LABEL  --  DECLARED AT 12371000  --  OCCURS AT 12433000
        12447500
LOOP  --  LABEL  --  DECLARED AT 20566011  --  OCCURS AT 20577325
        20578700
LOOP  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28241000
        28244400  28244800
LOOP  --  LABEL  --  DECLARED AT 28806000  --  OCCURS AT 28847000
        28852000
LOOP  --  LABEL  --  DECLARED AT 45003000  --  OCCURS AT 45095000
LOS  --  REAL  --  DECLARED AT 24032700
       *24038500*
LOWLINK  --  DEFINE  --  DECLARED AT 40008180
        40048000  40051000  40062000  40065020  40070000  40078038  40078040
LOX  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606200
        20597900
LP  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04163000
        04128000
LP  --  STREAM VARIABLE  --  DECLARED AT 07003640
        07003690  07003860
LP  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38740000
        38662000
LP  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
LP  --  LABEL  --  DECLARED AT 44020000  --  OCCURS AT 44137000
        44138000
LPAPER  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20462000
        20394900
```

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LPER -- REAL -- DECLARED AT 37422000
       *37426000* 37434000  37443000  37446000
LPPTR -- STREAM VARIABLE -- DECLARED AT 07003640
       *07003710* 07003800
LPRINT -- LABEL -- DECLARED AT 20393000 -- OCCURS AT 20466000
       20394900
LPS -- LABEL -- DECLARED AT 38201300 -- OCCURS AT 38243000
       38254500
LPS -- LABEL -- DECLARED AT 39009000
LPUNCH -- LABEL -- DECLARED AT 20389000 -- OCCURS AT 20460000
       20394900
LQ -- STREAM LABEL -- DECLARED AT 02615000 -- OCCURS AT 02616000
LQOVFLOW -- DEFINE -- DECLARED AT 00642200
LR -- LABEL -- DECLARED AT 16357000 -- OCCURS AT 16577000
       16365000
LRANDOM -- LABEL -- DECLARED AT 20392890 -- OCCURS AT 20481900
       20394090
LREMOTE -- LABEL -- DECLARED AT 20392000 -- OCCURS AT 20481100
       20396000  02615200
LS -- DEFINE -- DECLARED AT 08100750 -- OCCURS AT 02615100
       08101650
LS -- LABEL -- DECLARED AT 16699500 -- OCCURS AT 16744000
       16704000
LS -- LABEL -- DECLARED AT 20586715 -- OCCURS AT 20587550
       20587370
LS -- LABEL -- DECLARED AT 20591550 -- OCCURS AT 20594350
       20591950
LS -- LABEL -- DECLARED AT 44020000 -- OCCURS AT 44128000
       44129000
LSLATE -- REAL -- DECLARED AT 00023000
      *02016000* 02017000  02018000  02019000  48015200  48020000  48034000  48047000
LSPECIAL -- LABEL -- DECLARED AT 20393000 -- OCCURS AT 20464000
       20396000
LSTCNT -- REAL -- DECLARED AT 06068800
      *06086800* 06087600  06087900 *06088000*
LSX -- REAL -- DECLARED AT 28003000
LSX -- REAL -- DECLARED AT 28401400
       28432000  28432600  28432800  28433000  28433600 *28444000**28458600*
LT -- LABEL -- DECLARED AT 44020000 -- OCCURS AT 44117000
       44134000
LTAPE -- LABEL -- DECLARED AT 20389000 -- OCCURS AT 20458000
       20394900
LTT -- STREAM VARIABLE -- DECLARED AT 02434330
       02434365
LUN -- REAL -- DECLARED AT 02192000
       02195100  02197000  02199000  02200000 *02261300**02261350**02266000* 02266100  02267000  02270500  02275300
       02276100  02278000  02279000  02287245  02287250  02287254  02287255  02287260  02291000  02293000  02301000
       02308000 *02326000* 02327000
LUN -- REAL -- DECLARED AT 02661000
      *02663000* 02663100  02664000  02665100  02665150  02665200  02666000  02668000  02668500  02669000
LW -- LABEL -- DECLARED AT 18205000 -- OCCURS AT 18459000
       18362000  18370000  18400000  18430000  18432000  18432400  18447000
LWRITE -- LABEL -- DECLARED AT 18204000 -- OCCURS AT 18453500
       18315000  18322000  18328000  18337000  18346000  18393000
LWS -- LABEL -- DECLARED AT 18202000 -- OCCURS AT 18461000
LX -- LABEL -- DECLARED AT 04554300 -- OCCURS AT 04588570
       04588170
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L0  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04273200
        04274200
L0  --  STREAM LABEL  --  DECLARED AT 06074400  --  OCCURS AT 06074700
L0  --  STREAM LABEL  --  DECLARED AT 08300400  --  OCCURS AT 08301000
        08645000  08647000  12234000
L0  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15075000
        15069000  16823600  16824100
L0  --  STREAM LABEL  --  DECLARED AT 20032750  --  OCCURS AT 20032925
L1  --  STREAM LABEL  --  DECLARED AT 02224000  --  OCCURS AT 02235000
        02238000
L1  --  STREAM LABEL  --  DECLARED AT 02255200  --  OCCURS AT 02255500
L1  --  LABEL  --  DECLARED AT 02434135  --  OCCURS AT 02434250
        02434195  02434210
L1  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04201000
        04196800
L1  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04273400
L1  --  LABEL  --  DECLARED AT 04357200  --  OCCURS AT 04377200
        04360600  04390000  04410400
L1  --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04361000
L1  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04677200
        04675600  04676400
L1  --  STREAM LABEL  --  DECLARED AT 05710000  --  OCCURS AT 05711000
        06075300  06075900  06079200
L1  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06353500
        06351800
L1  --  STREAM LABEL  --  DECLARED AT 07066350  --  OCCURS AT 07066500
L1  --  REAL  --  DECLARED AT 07299000
       *07313000* 07318010  07319000
L1  --  STREAM LABEL  --  DECLARED AT 07464000  --  OCCURS AT 07464100
L1  --  STREAM LABEL  --  DECLARED AT 08108350  --  OCCURS AT 08108450
L1  --  STREAM LABEL  --  DECLARED AT 08300400  --  OCCURS AT 08300800
        08437900  08597400
L1  --  STREAM LABEL  --  DECLARED AT 08690140  --  OCCURS AT 08690170
        08690150  08690160  08739000
L1  --  STREAM LABEL  --  DECLARED AT 08807000  --  OCCURS AT 08814000
        08808000  12228500  12229000  12230500  12319000
L1  --  STREAM LABEL  --  DECLARED AT 12658000  --  OCCURS AT 12659000
L1  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15077000
        15069000
L1  --  STREAM LABEL  --  DECLARED AT 15552200  --  OCCURS AT 15552400
        16037800
L1  --  STREAM LABEL  --  DECLARED AT 16823400  --  OCCURS AT 16823600
L1  --  STREAM LABEL  --  DECLARED AT 17003850  --  OCCURS AT 17003900
L1  --  STREAM LABEL  --  DECLARED AT 17910500  --  OCCURS AT 17912000
L1  --  LABEL  --  DECLARED AT 19695000  --  OCCURS AT 19700000
        19703000  19704000  19704100  19710000
L1  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19903970
        19903980
L1  --  STREAM LABEL  --  DECLARED AT 20032750  --  OCCURS AT 20032900
        20055200  20600350
L1  --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20771100
        20730000  20732000
L1  --  LABEL  --  DECLARED AT 24111000  --  OCCURS AT 24130000
        24132000
L1  --  INTEGER  --  DECLARED AT 37422100
       *37431000* 37433000
L1  --  LABEL  --  DECLARED AT 38363000  --  OCCURS AT 38458000
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        38470000
L1   --  LABEL  --  DECLARED AT 41007200
L1   --  STREAM LABEL  --  DECLARED AT 41606400  --  OCCURS AT 41606800
L1   --  LABEL  --  DECLARED AT 42483000  --  OCCURS AT 42501900
        42501700  42501800
L10  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15069000
L11  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15069000
L12  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15070000
L13  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15070000
L14  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15070000
L15  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15070000
L16  --  LABEL  --  DECLARED AT 15068000  --  OCCURS AT 15088000
        15070000
L17  --  LABEL  --  DECLARED AT 15068000  --  OCCURS AT 15089000
        15070000
L2   --  STREAM LABEL  --  DECLARED AT 02234000  --  OCCURS AT 02241000
L2   --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04273600
L2   --  LABEL  --  DECLARED AT 04357200  --  OCCURS AT 04386600
        04360600  04388400  04411000  04423400
L2   --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04361200
L2   --  STREAM LABEL  --  DECLARED AT 05710000  --  OCCURS AT 05711500
        06028000
L2   --  STREAM LABEL  --  DECLARED AT 06074700  --  OCCURS AT 06074900
L2   --  STREAM LABEL  --  DECLARED AT 06078300  --  OCCURS AT 06079900
L2   --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06380100
        06351800
L2   --  REAL  --  DECLARED AT 07299000
       *07312000* 07314110  07314120  07321100  07324000  07330300
L2   --  STREAM LABEL  --  DECLARED AT 07464000  --  OCCURS AT 07464100
        07464100
L2   --  STREAM LABEL  --  DECLARED AT 08112350  --  OCCURS AT 08112550
        08437950  08597450
L2   --  STREAM LABEL  --  DECLARED AT 08644000  --  OCCURS AT 08647000
L2   --  STREAM LABEL  --  DECLARED AT 08690230  --  OCCURS AT 08690230
L2   --  STREAM LABEL  --  DECLARED AT 08740000  --  OCCURS AT 08747000
        08745000
L2   --  STREAM LABEL  --  DECLARED AT 08813000  --  OCCURS AT 08815000
L2   --  STREAM LABEL  --  DECLARED AT 12226500  --  OCCURS AT 12228000
        12227000
L2   --  STREAM LABEL  --  DECLARED AT 12659500  --  OCCURS AT 12660500
L2   --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15078000
        15069000  16040000
L2   --  STREAM LABEL  --  DECLARED AT 17004200  --  OCCURS AT 17004250
L2   --  LABEL  --  DECLARED AT 19695000  --  OCCURS AT 19709000
        19714200
L2   --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19904000
        19904030
L2   --  STREAM LABEL  --  DECLARED AT 20053700  --  OCCURS AT 20054400
L2   --  STREAM LABEL  --  DECLARED AT 20600290  --  OCCURS AT 20600320
        20600320
L2   --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20780000
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        20734000
L2  --  LABEL  --  DECLARED AT 38363000  --  OCCURS AT 38471000
        38460000
L2  --  LABEL  --  DECLARED AT 41007200
L2  --  STREAM LABEL  --  DECLARED AT 41606700  --  OCCURS AT 41607000
L3  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04273800
L3  --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04361400
L3  --  STREAM LABEL  --  DECLARED AT 05710500  --  OCCURS AT 05712000
        05711000
L3  --  STREAM LABEL  --  DECLARED AT 06080300  --  OCCURS AT 06081500
        06081500  06082000  06082800
L3  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06381300
        06351800
L3  --  REAL  --  DECLARED AT 07299500
       *07311500* 07314110  07314120  07314290  07321100  07326100  07330000  07330200  07330400
L3  --  STREAM LABEL  --  DECLARED AT 08437750  --  OCCURS AT 08438100
L3  --  STREAM LABEL  --  DECLARED AT 08597250  --  OCCURS AT 08597600
L3  --  STREAM LABEL  --  DECLARED AT 08646000  --  OCCURS AT 08649000
L3  --  STREAM LABEL  --  DECLARED AT 08690210  --  OCCURS AT 08690300
        08690230  08742000
L3  --  STREAM LABEL  --  DECLARED AT 08813000  --  OCCURS AT 08820000
L3  --  STREAM LABEL  --  DECLARED AT 12228000  --  OCCURS AT 12233000
L3  --  STREAM LABEL  --  DECLARED AT 12662000  --  OCCURS AT 12663000
L3  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15079000
        15069000
L3  --  STREAM LABEL  --  DECLARED AT 17004100  --  OCCURS AT 17004600
L3  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19904020
        19903990
L3  --  STREAM LABEL  --  DECLARED AT 20334000  --  OCCURS AT 20347000
        20344000
L3  --  LABEL  --  DECLARED AT 38363000  --  OCCURS AT 38474000
        38450000
L3  --  LABEL  --  DECLARED AT 41007200
L4  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04274000
L4  --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04361600
L4  --  STREAM LABEL  --  DECLARED AT 06081600  --  OCCURS AT 06081700
L4  --  STREAM LABEL  --  DECLARED AT 08690120  --  OCCURS AT 08690250
        08690250  08745000
L4  --  STREAM LABEL  --  DECLARED AT 12232500  --  OCCURS AT 12240000
L4  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15093000
        15069000
L4  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19904050
        19904000
L5  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04274200
L5  --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04361800
L5  --  STREAM LABEL  --  DECLARED AT 06081600  --  OCCURS AT 06082400
        06081900
L5  --  STREAM LABEL  --  DECLARED AT 08739500  --  OCCURS AT 08744000
L5  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15069000
L6  --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04274400
L6  --  STREAM LABEL  --  DECLARED AT 04360600  --  OCCURS AT 04362000
L6  --  STREAM LABEL  --  DECLARED AT 06083000  --  OCCURS AT 06083100
        08748000
L6  --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
        15069000
L6  --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18438000
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          18212000
L7   --  STREAM LABEL  --  DECLARED AT 04273000  --  OCCURS AT 04274600
L7   --  STREAM LABEL  --  DECLARED AT 06083000  --  OCCURS AT 06083500
          08751000
L7   --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
          15069000
L7   --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18432500
          18212000  18436000
L8   --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
          15069000
L8   --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18444000
          18212000
L9   --  LABEL  --  DECLARED AT 15067000  --  OCCURS AT 15091000
          15069000
M    --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
          00452600  00452700
M    --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02393500
          02393400
M    --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02696100
          02696000  02696100
M    --  REAL  --  DECLARED AT 04552000
          *04568400**04568470**04575000* 04579000  04656200
M    --  STREAM VARIABLE  --  DECLARED AT 04656200
          04656700
M    --  INTEGER  --  DECLARED AT 05608000
          *05612000* 05614000
M    --  STREAM VARIABLE  --  DECLARED AT 05614000
M    --  INTEGER  --  DECLARED AT 08306000
          *08308000* 08310000
M    --  STREAM VARIABLE  --  DECLARED AT 08310000
M    --  REAL  --  DECLARED AT 08318000
          08318200 *08326000**08329000**08331000* 08332100 *08332400* 08333000
M    --  STREAM VARIABLE  --  DECLARED AT 08318200
          08318400  08318500
M    --  STREAM VARIABLE  --  DECLARED AT 08333000
          08334100  08335000
M    --  STREAM VARIABLE  --  DECLARED AT 08365000
          08365200  08365300
M    --  INTEGER  --  DECLARED AT 08528000
          *08531000*
M    --  STREAM VARIABLE  --  DECLARED AT 19768768  --  OCCURS AT 15411000
          19768776
M    --  STREAM VARIABLE  --  DECLARED AT 28291200
          28292200
M    --  STREAM VARIABLE  --  DECLARED AT 30920000
          30921000  30922000
M    --  STREAM VARIABLE  --  DECLARED AT 32000510
          32000520
M    --  STREAM VARIABLE  --  DECLARED AT 37256000
          37257000
M    --  STREAM VARIABLE  --  DECLARED AT 37314000
          37316000 *37316200*
M    --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
          37357300  37357400
M    --  STREAM VARIABLE  --  DECLARED AT 41322500
          41322820
MAGTAPE  --  REAL SUBROUTINE  --  DECLARED AT 37020000
```

```
        37035000  37036000  37046140  37046800  37113000
MAINLOOP  --  LABEL  --  DECLARED AT 13019000  --  OCCURS AT 13106000
        13113000  13129000
MAINT  --  LABEL  --  DECLARED AT 09701550  --  OCCURS AT 09720650
        09706050
MAINTBUFFAREAV  --  DEFINE  --  DECLARED AT 00017280
        04278200  04365400  04555250  05952995  08385100  08410000  14411820  41312700  41314000  41323130  41328600
MAINTBUFFER  --  REAL ARRAY  --  DECLARED AT 04121950
       *04137100**04137160**04137202* 04137215 *04137220* 04137250  04137275  04137280 *04146100**04150100* 44179050
MAINTLOGARRAY  --  REAL ARRAY  --  DECLARED AT 04121400
        41323300  41327300 *44188200*
MAINTLOGGER  --  PROCEDURE  --  DECLARED AT 41327000  --  FORWARD AT 04121650
        04137260  41310800  41335200
MAKEIODS  --  SUBROUTINE  --  DECLARED AT 39031000
        39048000  39145000  39231000  39245000  39293500
MAKEMESS  --  SUBROUTINE  --  DECLARED AT 04359000
        04364600  04376400  04382200  04386600  04392800  04396000  04404600  04416200
MAKEMLOG  --  DEFINE  --  DECLARED AT 04370600
        04377000  04382000  04387000  04393400  04395800  04405400  04416600  04421400
MAKEPRESENT  --  LABEL  --  DECLARED AT 00030000  --  OCCURS AT 00037000
        00052000
MAKEPRESENT  --  PROCEDURE  --  DECLARED AT 14155000  --  FORWARD AT 02696200
        14218045  14302000  14358325  18520800  18552600  18720300  18740100  19582000  19765000  19904600  20192500
        31008000  31017400  42486000  42525140  42526000  42534000  42537050  42538000  48032700  48109000
MAKESAVE  --  SUBROUTINE  --  DECLARED AT 44037200
        44202119
MAKETHEMESSAGE  --  SUBROUTINE  --  DECLARED AT 08115100
        08115700  08116900
MARKER  --  DEFINE  --  DECLARED AT 41430400
        41436600  41449800  41479800  41489100  41493100  41500300  41500600  41502000
MARKLEVEL  --  DEFINE  --  DECLARED AT 00005010
        15501500  20289390  44203000
MASK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019000
        00018000  00019000
MASK  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 00021000
        00020000
MASK  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02003000
        02000000  02001000  02008200
MASK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02022000
MASK  --  REAL  --  DECLARED AT 02434125
         *02434445* 02434532  02434534  02434600  02434630  02434760  02434770  02434800
MASK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04242000
        04240000  04241000 *04245000* 04246000  04250000  04251200
MASK  --  STREAM VARIABLE  --  DECLARED AT 04251200
MASK  --  REAL  --  DECLARED AT 04259000
         *04304600* 04304800 *04325800* 04326000 *04332600* 04333000  04333200
MASK  --  REAL  --  DECLARED AT 04356000
         *04373000* 04373200  04378800  04419000
MASK  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08599000
        08605000
MASK  --  STREAM VARIABLE  --  DECLARED AT 08605000
        08607000
MASK  --  REAL  --  DECLARED AT 08626000
         *08667000* 08671000
MASK  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09719000
        09708000
MASK  --  REAL  --  DECLARED AT 38006000
```

```
        *38035000**38042000* 38043000 *38049300* 38049700 *38053000* 38053500  38054000 *38067000**38070000* 38088000
MASK  --  REAL  --  DECLARED AT 38102600
        38105400  38105500 *38126500**38127000**38128000**38130500**38139000*
MASK  --  REAL  --  DECLARED AT 38200600
        38203400  38203500 *38263000**38292500*
MASK  --  REAL  --  DECLARED AT 39004000
        *39044000* 39046000
MAX  --  REAL  --  DECLARED AT 28003600
MAX  --  REAL  --  DECLARED AT 28401600
        28428000 *28456400* 28457000
MAXINT  --  REAL  --  DECLARED AT 09501000
       *09505600* 09506000  09506100  09506500 *09507000* 09507500  09508600
MAXMIX  --  REAL  --  DECLARED AT 12355000
       *12385000**12390000* 12398000  12437000  12442000
MAXMVSIZE  --  DEFINE  --  DECLARED AT 06071000
        06095000
MAXOLAY  --  REAL  --  DECLARED AT 12355500
       *12413000* 12421000 *12422000* 12426500
MAXROWS  --  DEFINE  --  DECLARED AT 37501500
        37538500
MAXSIZ  --  DEFINE  --  DECLARED AT 05780010
        05842475  05842700  05844935  05845400  05849420  05852700  05974200  05975000
MAXV  --  DEFINE  --  DECLARED AT 20247920
        20507000  20507100
MAXVALUE  --  REAL  --  DECLARED AT 12356000
       *12435500* 12438000 *12439000* 12444000
MAYBE  --  DEFINE  --  DECLARED AT 37007200
        37046740  37046825
MAYBEWORKEDON  --  FIELD  --  DECLARED AT 00027000
        00036000  00037000  00039045  00047000  00050000
MC  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16806000
        16705000
MCP  --  DEFINE  --  DECLARED AT 00013600
        04105550  06463920  07262100  08276365  09683100  14541000  18522300  18528200  20289113  20289252  20511315
        20511665  20575350  20578050  20593600  20602300  20603570  20605750  20740000  22069212  28282800  28416400
        38077000  38217000  38491000  41602400  41603900  45094400  45099800
MCP  --  LABEL  --  DECLARED AT 22236000  --  OCCURS AT 22385000
        22297000
MCPBASE  --  REAL  --  DECLARED AT 00024100
        00042000  09681600  41325400  44037300 *44083000*
MCPFREE  --  DEFINE  --  DECLARED AT 00081670
        09637000  09680000  44253500
MCPJOB  --  REAL  --  DECLARED AT 20012600
        20055500
MCPJOB  --  REAL  --  DECLARED AT 20081800
        20100800  20105000  20105400
MCPJOB  --  REAL  --  DECLARED AT 20142200
       *20152100* 20152200  20152300 *20152800* 20153500  20158500  20164200  20165300  20174300  20176132
MCPMASK  --  DEFINE  --  DECLARED AT 00081670
        09637000  09638000  09647000  09680000  09680100  09682620
MCPNAMESEG  --  DEFINE  --  DECLARED AT 00024910
        15501300  44202700  44202900
MCPTABLEAREAV  --  DEFINE  --  DECLARED AT 00017540
        44152000
MCPTEMP  --  REAL  --  DECLARED AT 22235620
       *22294120* 22429230
MCPTYPE  --  DEFINE  --  DECLARED AT 00005100
```

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        09681505
MDELTA  --  REAL  --  DECLARED AT 04121050
        41319700  41320460 *41321750* 41328900  41330200  41330400  41331700  41331900 *41332000* 41332300 *41332700*
        41333300 *44188200*
MDUMPAREAV  --  DEFINE  --  DECLARED AT 00017566
        02434430
MDY  --  STREAM VARIABLE  --  DECLARED AT 08333000
        08335200  08335800
MEMASK  --  REAL  --  DECLARED AT 02393800
        02434570 *44106000**44122000**44128200* 44203150
MEMASK  --  STREAM VARIABLE  --  DECLARED AT 44203150
        44205300
MEMNO  --  DEFINE  --  DECLARED AT 00081982
        22007000  22007100  24036125
MEMORYPARITY  --  LABEL  --  DECLARED AT 00009000  --  OCCURS AT 48134000
        48102000
MEND  --  DEFINE  --  DECLARED AT 00077000
MEND  --  REAL  --  DECLARED AT 44012000
        44014000 *44112000* 44114000  44115000  44116000  44136000  44148100  44148200
MEND  --  REAL  --  DECLARED AT 44206800
        44207000
MEND  --  REAL  --  DECLARED AT 45002200
        45002300  45002600
MES  --  REAL  --  DECLARED AT 14164200
        14204100  14204600  14205200  14205300  14205500
MESAGESPACE  --  REAL  --  DECLARED AT 20085700
       *20106000* 20111600  20111620  20118350  20118370 *20118390*
MESAGESPACE  --  STREAM VARIABLE  --  DECLARED AT 20111620
MESS  --  REAL  --  DECLARED AT 24042550
        24042650 *24042675* 24042680  24042700  24042875  24043700  24044400  24045600
MESS  --  STREAM VARIABLE  --  DECLARED AT 24042700
MESSAGE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452000
        00451800  00451900
MESSAGE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02132500
        02132300  02132400  02133000 *02134000* 02134005  02136000  02139000  02140000  02141000  02142000  02142100
        02144500  02173000  02173150  02173389
MESSAGE  --  SUBROUTINE  --  DECLARED AT 06206110
        06328100
MESSAGE  --  LABEL  --  DECLARED AT 14627200  --  OCCURS AT 14644000
        14636100  14639000  14641000  14642100
MESSAGEHOLDER  --  REAL  --  DECLARED AT 00402000
        02120000  02123000  02124500 *02126000**02129000* 02135000 *02136000* 02139000 *02141000* 16224000 *16239000*
MESSAGETABLE  --  REAL ARRAY  --  DECLARED AT 00435000
        02218000  02219000  08604000  08604100  08631000  08631100  08690000  08690020  16041100  16041110  17002000
        17003000  20601660  20601720  20601740  30915000  30917000 *41502100* 41502300  44165700
MESSAGETABLEBUILDER  --  PROCEDURE  --  DECLARED AT 41430000  --  FORWARD AT 00491000
        40339000  41500200
MESSAGETABLESIZE  --  DEFINE  --  DECLARED AT 00436000
        41500500  41501800  44151055  44165700
MESSAGEWRITER  --  PROCEDURE  --  DECLARED AT 02114000
        02137000
MF  --  STREAM VARIABLE  --  DECLARED AT 28248600
        28249000
MFID  --  REAL  --  DECLARED AT 08099350
        08101950  08102000  08102050 *08102100* 08104900
MFID  --  DEFINE  --  DECLARED AT 08255900
        08259225  08268500
```

```
MFID  --  REAL  --  DECLARED AT 12503000
          12537000  12562000  12590000  12630000  12632000 *12677500**12687000*
MFID  --  REAL  --  DECLARED AT 12803000
MFID  --  REAL  --  DECLARED AT 13004000
MFID  --  REAL  --  DECLARED AT 19688050
         *19696600* 19698000  19699000  19767900  19768200  19799000
MFID  --  STREAM VARIABLE  --  DECLARED AT 19768200
MFID  --  REAL  --  DECLARED AT 28000600
          28011200  28011830  28013600  28087400
MFID  --  REAL  --  DECLARED AT 28201000
          28212000 *28253200* 28263400  28266400  28270816  28270820  28281600  28283600  28287000  28291200  28296400
          28299600 *28307720* 28307725
MFID  --  STREAM VARIABLE  --  DECLARED AT 28263400
          28263600
MFID  --  REAL  --  DECLARED AT 28400600
          28408400  28415200  28415250  28415400  28417000  28419000  28419600  28425400  28426000  28446300  28447800
         *28467600* 28468000  28468200  28473200 *28473400**28476400* 28476800 *28480000*
MFID  --  STREAM VARIABLE  --  NAME PARAMETER  --  DECLARED AT 28411200
          28411800
MFID  --  STREAM VARIABLE  --  NAME PARAMETER  --  DECLARED AT 28421600
          28422200
MFID  --  REAL  --  DECLARED AT 38007000
          38013010 *38013030* 38013100  38014620  38014900  38045120  38045400 *38059000* 38077500  38080500  38081000
         *38087000*
MFID  --  REAL  --  DECLARED AT 38102700
          38105800  38113000  38151000  38158500  38159500 *38163500* 38164500
MFID  --  STREAM VARIABLE  --  DECLARED AT 38159500
          38160500
MFID  --  REAL  --  DECLARED AT 38200700
          38203800  38213500  38231500  38251500  38275500  38287000  38296750
MFID  --  REAL  --  DECLARED AT 39004100
         *39091000* 39143000
MFID  --  REAL  --  DECLARED AT 41316400
         *41317800* 41318370  41320360  41320400  41320600  41321600  41322500
MFID  --  REAL  --  DECLARED AT 41600300
         *41600900**41601300**41601700* 41602200  41607200
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
          00371000  00372000
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
          00374000  00375000
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00390200
          00390000  00390100
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00395000
          00393000  00394000
MID   --  REAL  --  DECLARED AT 05950600
          05950800  05953130  05953135 *05953600* 05953800  05964000 *05967900**05969000**05975400**05976100*
MID   --  STREAM VARIABLE  --  DECLARED AT 05953135
          05953160
MID   --  STREAM VARIABLE  --  DECLARED AT 05964000
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06460200
          06460000  06460100  06463200  06463225  06463240  06463560 *06463600* 06463660
MID   --  REAL  --  DECLARED AT 14624100
MID   --  STREAM VARIABLE  --  DECLARED AT 28444200
          28444600
MID   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
          37000000  37001000
MID   --  REAL  --  DECLARED AT 37004100
```

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        37046630  37046730  37046840  37046980  37047020  37047650  37048000  37085000  37100010  37112000  37113000
        37113100  37113200  37174000
MID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37187100 *37187130* 37191000  37197000  37199000  37216000  37224200 *37232000* 37235750
       *37236500* 37240200  37240400  37242200  37242800  37262000
MID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37286200
        37286000  37286100  37292800
MID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000  37346000
MID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37420000
        37418000  37419000  37424200  37428100
MID  --  REAL  --  DECLARED AT 38362000
        38401000  38411500  38453000  38456000  38461000  38464000  38499000  38509000  38512000  38513000  38515000
        38518500
MID  --  REAL  --  DECLARED AT 38547000
        38610200
MID  --  REAL  --  DECLARED AT 38655000
MID  --  REAL  --  DECLARED AT 41003000
        41046000  41190800
MIDNIGHT  --  DEFINE  --  DECLARED AT 02393200
        06188100  15622000  20157700  22012000  22909000
MIDPTR  --  REAL  --  DECLARED AT 28003800
        28004000
MIDPTR  --  REAL  --  DECLARED AT 28401600
        28444200 *28445800*
MINE  --  REAL  --  DECLARED AT 14157000
       *14186020**14186150* 14186160 *14194000* 14196000  14197000  14198000  14198100  14203000  14203010  14203020
        14203200  14203300  14206000  14206135  14207000  14209100  14209300  14212100  14217500  14218010  14220000
MINSIZE  --  DEFINE  --  DECLARED AT 06070900
        06111000  06111100  06111700
MIRID  --  LABEL  --  DECLARED AT 20566610  --  OCCURS AT 20570340
        20570510
MISSL  --  LABEL  --  DECLARED AT 44019000  --  OCCURS AT 44191595
        44191145
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
        00379600
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00463100
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02025000
        02026000  02027000
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02032000
        02033000  02034000
MIX  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 02055000
        02053000  02054000  02065000  02079000
MIX  --  INTEGER  --  DECLARED AT 02133010
       *02134005* 02140000
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02180000
        02181000  02182000  02184000  02186000  02186050
MIX  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 02697770
        02697750  02697770
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04002000
        04000000  04001000
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121550
        04121500  04121550
MIX  --  REAL  --  DECLARED AT 04258000
        04271800  04278600  04279000  04283000 *04284400* 04300600  04301600  04302200  04316000  04333400  04352200
        04352600
MIX  --  STREAM VARIABLE  --  DECLARED AT 04271800
```

```
MIX  --  REAL  --  DECLARED AT 04356500
         04359600  04365800  04366200  04366800 *04372050* 04376600  04383400  04386800  04393000  04404800  04416400
MIX  --  REAL  --  DECLARED AT 04554100
         04567600  04567830  04568590 *04569100* 04626000  04647050  04648000  04648050
MIX  --  REAL  --  DECLARED AT 04668550
         04671800  04672700  04673150 *04673850* 04674850  04675250  04678100  04678350  04680100  04681950  04683800
         04686350  04687050
MIX  --  INTEGER  --  DECLARED AT 06184100
        *06190100* 06193000  06193500  06194000  06194900  06195118  06203000  06203600  06203700  06204000  06205010
         06205020  06205050  06205100  06205200  06206000  06206140
MIX  --  STREAM VARIABLE  --  DECLARED AT 06206140
         06206160
MIX  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 06402000
         06400000  06401000  06411000  06411010  06412000  06416000  06417000  06417500  06418000  06421000  06422000
         06423000  06424000  06426000
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07485000
         07501000  07502000  07503000  07504000  07511000
MIX  --  STREAM VARIABLE  --  DECLARED AT 07504000
         07509000
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08732000
         08730000  08731000  08759000  08760000  08763000  08764000  08767000  08768000  08771000  08772000  08774000
         08784000  08787000  08789000  08791000  08798500
MIX  --  STREAM VARIABLE  --  DECLARED AT 08774000
MIX  --  STREAM VARIABLE  --  DECLARED AT 08791000
         08793000 *08793500*
MIX  --  REAL  --  DECLARED AT 12356500
        *12390000* 12392000  12395500 *12398000* 12398500  12399000  12400000 *12413500* 12414000  12414500  12415000
         12416000  12417000  12418500  12419000  12419500  12419600  12420500  12421000  12421500  12422000  12422500
         12423000 *12424700* 12425200 *12437000* 12437500  12438000  12439500 *12442000* 12442500  12443000  12444000
         12445500
MIX  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 14107000
         14105000  14106000  14113000  14117000
MIX  --  REAL  --  DECLARED AT 15111900
        *15113100* 15113300  15113400  15113500  15114300  15114600  15114700  15115000  15115400  15115900
MIX  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15400000
         15404000  15418000  15419000  15422000  15424000  15426000  15437100
MIX  --  STREAM VARIABLE  --  DECLARED AT 15426000
         15429000 *15429500*
MIX  --  REAL  --  NAME PARAMETER  --  DECLARED AT 16034900
         16036200  16040900  16041200  16041550  16043640 *16043660*
MIX  --  STREAM VARIABLE  --  DECLARED AT 16036200
         16037500  16040400  16041650
MIX  --  REAL  --  DECLARED AT 16048000  --  OCCURS AT 16041550
        *16073000* 16103000  16112000 *16115000* 16116000  16117000  16118000  16118200  16121000  16123000  16124000
         16163000  16163200  16164000  16176000  16178000  16181000  16199000 *16205000* 16206100 *16217000* 16229000
        *16241500* 16247000  16251000  16257000  16258000  16343100  16343950
MIX  --  REAL  --  DECLARED AT 16349000
        *16374000* 16588000  16689450
MIX  --  REAL  --  DECLARED AT 16694000
         16694500  16698000 *16711000* 16713500  16741000 *16741250* 16788000  16803000  16850700  16851100  16851200
         16853100  16853500  16854600  16854700  16902950
MIX  --  STREAM VARIABLE  --  DECLARED AT 16854600
         16855200
MIX  --  REAL  --  DECLARED AT 16909500
         16910000  16926010  16928000  16929000  16930000  16948000  16948500  16950000  16954000  16956000  16956020
         16956090  16957500
MIX  --  REAL  --  DECLARED AT 19901500
```

```
      *19903810* 19903820 *19903830* 19903850  19903860  19903900  19903910  19904350  19904400  19904650  19905310
MIX   --  REAL  --  DECLARED AT 20012300
      20037200  20050000  20059400  20060400
MIX   --  REAL  --  DECLARED AT 20081500
      20091000  20091400  20091500  20091600  20092700  20092900  20093500  20093600  20101300  20105900  20110700
      20118600  20119900  20121800  20122100  20124700  20125000  20127300  20128000  20128100  20128400
MIX   --  STREAM VARIABLE  --  DECLARED AT 20101300
      20101700
MIX   --  STREAM VARIABLE  --  DECLARED AT 20105900
      20106600
MIX   --  REAL  --  DECLARED AT 20141900
     *20167800* 20167900  20169600  20169800  20170800  20171000  20171100  20171200  20172100  20172600  20172700
      20173200  20173300  20173800  20173900  20174300  20175400  20175500  20175700  20176090  20176102  20176120
      20178900  20179100  20179220  20180000  20180400  20181000  20188600  20191100  20191300  20191800  20192200
      20193300  20193400  20194300  20194400  20195400  20195500  20195600  20196500  20196800  20196900  20197100
      20197600  20198500
MIX   --  STREAM VARIABLE  --  DECLARED AT 20607020
      20607160
MIX   --  REAL  --  DECLARED AT 22231000
      22260000  22286020  22286030 *22297000* 22299000  22300000  22301000  22303200  22325200  22331400  22333800
      22356140  22356150  22357000 *22374000* 22376000  22377000 *22407000* 22408000  22409000  22410000 *22413000*
      22413010  22416000  22420000  22421000  22422000  22423100
MIX   --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 24103000
      24101000  24102000  24150000  24165000  24167000
MIX   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
      32000000  32000400  32000750  32000800  32000810  32001500
MIX   --  STREAM VARIABLE  --  DECLARED AT 32000810
      32001300
MIX   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41312100
      41312000  41312100  41312400  41312600  41312900  41313000  41313100  41313200  41313300  41314200  41314400
      41314500
MIXCODE  --  REAL  --  DECLARED AT 16910000
     *16927500**16928000* 16947000  16949000
MIXER  --  REAL  --  DECLARED AT 02192000
     *02261000* 02264000 *02318000* 02320000 *02322000* 02324000
MIXF  --  DEFINE  --  DECLARED AT 00168000
      48064000  48071000
MIXIT  --  STREAM LABEL  --  DECLARED AT 04362400  --  OCCURS AT 04364000
      04363000
MIXMAX  --  DEFINE  --  DECLARED AT 00004000
      02365000  02373000  08861000  08937000  09606000  09611000  12407000  12407500  12408000  12408500  12410500
      12411000  12413500  12457500  12473090  12900000  14385000  14431480  15600800  15600950  15602400  15604100
      16106000  16115000  16343950  16689450  16902950  16948000  20024600  20035300  20037200  20039500  20091200
      20094000  20167800  20175100  20582600  20586200  20589460  22008000  22014400  22015000  22029000  22407000
      22413000  32100200  44151000  44151010  44151052  44151630  44154100  44155000  44163030  44192000  44254500
      44259500  44268000  44276000  44280100  45106000
MIXPRINT  --  PROCEDURE  --  DECLARED AT 32100000  --  FORWARD AT 00379400
      16739500  32100800
MIXUP  --  REAL  --  DECLARED AT 22231000
      22235000 *22357000**22359000* 22361000  22363000  22365140  22365150 *22366000* 22372000
MK  --  REAL  --  DECLARED AT 04257600
      04271800 *04286000**04295600**04333200*
MK  --  STREAM VARIABLE  --  DECLARED AT 04271800
      04272400
MKSCW  --  REAL  --  DECLARED AT 02133000
      02143000
MKSW  --  REAL  --  DECLARED AT 15111800
```

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        15116100
ML  --  STREAM VARIABLE  --  DECLARED AT 15501500
        15502200
ML  --  STREAM VARIABLE  --  DECLARED AT 20289390
        20289425  20289470
ML  --  STREAM VARIABLE  --  DECLARED AT 44203000
        44204600
MLA  --  REAL ARRAY  --  DECLARED AT 41327300
        41328400 *41328600**41328800**41330500* 41331900 *41332300**41333500**41335000*
MLOG  --  REAL  --  DECLARED AT 04121100
       *41318760* 41318780  41318820 *41318880**41318940**41318980* 41319240  41319700  41320460 *41321750* 41328900
        41330200  41330500 *41332400* 41333600  41333800 *44188200*
MLOGIT  --  SUBROUTINE  --  DECLARED AT 05952985
        05953055  05953205  05979350
MM  --  DEFINE  --  DECLARED AT 28006800
        28042600  28046000  28089200
MM  --  DEFINE  --  DECLARED AT 28207200
        28230000  28262200  28303200
MN  --  REAL  --  DECLARED AT 08344000
       *08360000* 08362000  08365000  08367000
MN  --  INTEGER  --  DECLARED AT 40005110
       *40249105* 40254100  40261046  40290400  40290600  40322410  40324102  40324104  40327000
MODE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
        00374000  00375000
MODE  --  REAL  --  DECLARED AT 04552000
       *04567030**04567840**04568100**04568372**04581000**04584000**04588050**04588110**04588250**04600000**04604000*
       *04639100**04648200**04649000* 04651000  04651100  04651300
MODE  --  REAL  --  DECLARED AT 04668650
       *04673500**04673900**04684650* 04688050
MODE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37249000
MODE  --  INTEGER  --  DECLARED AT 38004000
       *38022000*
MODE  --  INTEGER  --  DECLARED AT 38102400
        38106600  38113500 *38122000* 38123000 *38148500*
MODE  --  INTEGER  --  DECLARED AT 38200400
        38204600 *38241000**38242500**38245500* 38259000
MODE  --  INTEGER  --  DECLARED AT 39003000
        39027000 *39088000**39236900**39241000*
MODULUS  --  DEFINE  --  DECLARED AT 00419150
        08268600  08268700  08268900  14562000  18225000  20382060  20382062  20382064  20382120  40293030
MOD2IOS  --  STREAM VARIABLE  --  DECLARED AT 04655000
        04655300
MOD3IOS  --  DEFINE  --  DECLARED AT 00416990
        04129590  04588010  04655000  08044500  19685456  22111500
MOM  --  FIELD  --  DECLARED AT 00061070
        02212000  02216300  02216400  14358345  15422000  16852100  16853600  16853700  31013000  31013100  31017000
        31017100  42490000  42506300  42506400
MOM  --  DEFINE  --  DECLARED AT 07388000
MOM  --  REAL  --  DECLARED AT 14158000
        14164000 *14230000**14234000* 14236000  14237000  14238000  14239000  14242000  14243000  14247000  14250000
        14251000  14253000  14255000  14257000  14259000  14267000  14271000 *14279000*  14279550  14281000 *14293000*
        14297000  14299000  14300000
MOM  --  REAL  --  DECLARED AT 22230000
        22270300  22286090  22286120 *22295000* 22322000  22323000 *22324800*  22326400  22327600  22328400  22329600
        22331800  22334200  22335200  22336000  22349100  22371220  22383050  22386250  22386350  22402000  22415000
        22424000  22427000
```

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MOM  --  REAL  --  DECLARED AT 42514000
       *42532000* 42533000  42534000  42535000  42536000  42537050  42539000
MOMMIX  --  INTEGER  --  DECLARED AT 14351200
       14351205 *14360320* 14360330 *14360380**14360400* 14360500 *14361100* 14370100  14370110  14370115  14370130
      *14370140* 14370150
MON  --  STREAM VARIABLE  --  DECLARED AT 12309000
       12313500
MONTOG  --  REAL  --  DECLARED AT 12207500
      *12287000* 12309000
MONTOG  --  STREAM VARIABLE  --  DECLARED AT 12309000
       12313500
MORE  --  LABEL  --  DECLARED AT 07543100  --  OCCURS AT 07547500
       07559180
MORE  --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20715000
       20780000
MORFINITIALIZE  --  PROCEDURE  --  DECLARED AT 44206450  --  FORWARD AT 44009000
       44206350  44281500
MOTHER  --  REAL  --  DECLARED AT 14158000
       14164000 *14279000* 14279150  14279450  14280000  14281000  14283000  14284000  14292000  14292100  14293000
MOTHER  --  INTEGER  --  DECLARED AT 14351200
      *14360600* 14360800 *14361100* 14364300  14370020 *14370050**14370060* 14370065 *14370130* 14370155  14370160
MOTHER  --  REAL  --  DECLARED AT 42484000
      *42490000* 42493000  42501040  42501820  42502000
MOVE  --  STREAM PROCEDURE  --  DECLARED AT 00082000
       00089000  01250800  01261300  02434580  04555300  04655800  05725000  05845700  05851300  05851900  05953075
       05972000  05973600  06077600  06095200  06100900  06380850  06381070  06416000  07112000  07118000  07139575
       07140000  08274500  08569600  08712160  08947400  14598300  18056000  18720700  19732000  19904700  20121200
       20289065  20567025  28051000  28062200  28273400  28288200  28429400  28429600  28432800  28433000  28434000
       28459200  28861000  28868300  37278000  37278200  37408000  37509000  37543000  38218500  38404000  38707000
       38803000  40014000  40016260  40016420  40249110  40249130  41318220  41320420  41320490  41323150  41323300
       41323550  41328700  41329400  41331900  41332300  41332700  41603000  42539000  44154000  44189550  44189600
       44189800  44189900  44191010  44191015  44191025  44202800  44206200  44240860  44256150  44256250  44264000
MOVEABLE  --  DEFINE  --  DECLARED AT 06073500
       06093400
MOVEANDFIX  --  SUBROUTINE  --  DECLARED AT 06096500
       06112200
MROW  --  REAL  --  DECLARED AT 04121150
       41317300 *41317400**41318400**41318740* 41318820  41318860  41318940  41319200  41319320  41320220  41321450
       41322450  41322500 *41325600* 41328200 *41328300* 41328900  41330500  41332400  41333600  41334300 *41334900*
      *44188300**45135700*
MS  --  REAL  --  DECLARED AT 08283000
      *08295600**08297400**08298600* 08298800
MS  --  STREAM VARIABLE  --  DECLARED AT 08298800
       08300400
MS  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16773500
       16704000
MSCW  --  REAL  --  DECLARED AT 02115000
       02130000
MSCW  --  REAL  --  DECLARED AT 04256600
       04352800
MSCW  --  REAL  --  DECLARED AT 04353600
       04433600
MSCW  --  REAL  --  DECLARED AT 05950500
       05979500
MSCW  --  REAL  --  DECLARED AT 06068350
       06116300
MSCW  --  REAL  --  DECLARED AT 06406500
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          06425000
MSCW   --  REAL  --  DECLARED AT 08568125
          08573300
MSCW   --  REAL  --  DECLARED AT 12351500
          12476000
MSCW   --  REAL  --  DECLARED AT 12501500
          12621000
MSCW   --  REAL  --  DECLARED AT 12801500
          12847000
MSCW   --  REAL  --  DECLARED AT 14351220
          14354000  14434000
MSCW   --  REAL  --  DECLARED AT 16691550
          16903000
MSCW   --  REAL  --  DECLARED AT 16907250
          16971000
MSCW   --  REAL  --  DECLARED AT 20011500
MSCW   --  REAL  --  DECLARED AT 20080700
MSCW   --  REAL  --  DECLARED AT 20141100
          20211400
MSCW   --  REAL  --  DECLARED AT 20566100
MSCW   --  REAL  --  DECLARED AT 20581000
MSCW   --  REAL  --  DECLARED AT 20584000
MSCW   --  REAL  --  DECLARED AT 20586800
MSCW   --  REAL  --  DECLARED AT 20589800
MSCW   --  REAL  --  DECLARED AT 20591000
MSCW   --  REAL  --  DECLARED AT 20595000
MSCW   --  REAL  --  DECLARED AT 20596800
MSCW   --  REAL  --  DECLARED AT 20600010
          20601250  20610600
MSCW   --  REAL  --  DECLARED AT 20701500
MSCW   --  REAL  --  DECLARED AT 22002500
          22053900
MSCW   --  REAL  --  DECLARED AT 22056500
          22226000
MSCW   --  REAL  --  DECLARED AT 28000500
          28049400
MSCW   --  REAL  --  DECLARED AT 28200800
          28246000
MSCW   --  REAL  --  DECLARED AT 37451500
          37465000
MSCW   --  REAL  --  DECLARED AT 38001000
          38047000
MSCW   --  REAL  --  DECLARED AT 38102100
          38110000
MSCW   --  REAL  --  DECLARED AT 38200100
          38210000
MSCW   --  REAL  --  DECLARED AT 38356000
          38387000
MSCW   --  REAL  --  DECLARED AT 38541000
          38580000
MSCW   --  REAL  --  DECLARED AT 38649000
          38695000
MSCW   --  REAL  --  DECLARED AT 41316250
          41325600
MSCW   --  REAL  --  DECLARED AT 41327250
          41335100
MSCW   --  REAL  --  DECLARED AT 45001000
```

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        45075590
MSFF  --  FIELD  --  DECLARED AT 00060130
        02216200  02216300  16853500  16853600
MSG  --  REAL  --  DECLARED AT 04259400
        04271800 *04286000**04295600* 04305400 *04314400**04318200**04319400**04333000**04335400**04336400**04337200*
MSG  --  STREAM VARIABLE  --  DECLARED AT 04271800
        04272800 *04275000*
MSG  --  LABEL  --  DECLARED AT 05952620  --  OCCURS AT 05978000
        05975900  05976850
MSK  --  STREAM VARIABLE  --  DECLARED AT 06381395
        06381405
MSTART  --  DEFINE  --  DECLARED AT 00073000
        02262000  02318000  02322000  15601000
MSTART  --  REAL  --  DECLARED AT 44014000
       *44101000* 44113000  44114000  44115000  44123000  44125000  44126000  44131000  44140000
MT  --  LABEL  --  DECLARED AT 37007000  --  OCCURS AT 37112000
        37008000  37099000
MT  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38749000
        38662000
MT  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
MTXIN  --  REAL PROCEDURE  --  DECLARED AT 08000000  --  FORWARD AT 02696700
       *08022000* 08029000  08083000  08292000
MULFID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02637000
        02635000  02636000  02641000
MULFID  --  STREAM VARIABLE  --  DECLARED AT 02641000
        02645000
MULTITABLE  --  REAL ARRAY  --  DECLARED AT 00286000
        01254650 *02200000* 02434190 *02434250**02665150* 04326000  04368800  04391550  04675450 *04680200**07016000*
       *07409200**08041000**08086000**08256450**08259840**08280030* 08292500  08293000 *08431000* 08472000 *08582100*
       *12530000* 12687000 *12875500**12876000**20590400**20590550**20595250**20595900**22069460**22084500**22100500*
       *22180000* 22188000  22188100  22191000  28248600  37024000  37042000 *37046160**37046840**37046980**37047500*
       *37047650**37174000* 37187130  37191000  37199000 *37235750* 37236500  37314000  37314200 *37319010* 39944000
        39959000  40249250  44176000
MUSTAND  --  DEFINE  --  DECLARED AT 28208300
        28270812  28270830  28281550
MV  --  REAL ARRAY  --  DECLARED AT 06069300
        06087200  06087300 *06087600**06087900**06088000**06088100* 06088200 *06088500**06089300* 06089900  06090000
       *06093700**06093900**06094100**06095100* 06097000  06097100  06097200 *06097300* 06099400  06099500 *06100100*
       *06100200* 06100500 *06107200*
MVE  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06097100
        06100300
MVEMORE  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06086900
        06088600  06089400
MX  --  STREAM LABEL  --  DECLARED AT 04273200  --  OCCURS AT 04274800
        04273400  04273800  04274000  04274400
MX  --  STREAM VARIABLE  --  DECLARED AT 04359600
MX  --  STREAM VARIABLE  --  DECLARED AT 08839000
MX  --  STREAM VARIABLE  --  DECLARED AT 12833000
        12834000
MX  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16739000
        16703500
MX  --  STREAM VARIABLE  --  DECLARED AT 37036400
        37036600
MXX  --  STREAM LABEL  --  DECLARED AT 04360800  --  OCCURS AT 04362400
        04361000  04361400  04361600  04361800  04362000
MYMSCW  --  REAL  --  DECLARED AT 20011700
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          20022700
MYMSCW    --  REAL  --  DECLARED AT 20080900
          20094600
MYMSCW    --  REAL  --  DECLARED AT 20141300
MYMSCW    --  REAL  --  DECLARED AT 20566100
          20567520
MYMSCW    --  REAL  --  DECLARED AT 20581000
          20581125
MYMSCW    --  REAL  --  DECLARED AT 20584000
          20584325
MYMSCW    --  REAL  --  DECLARED AT 20586800
          20587110
MYMSCW    --  REAL  --  DECLARED AT 20589800
          20590010
MYMSCW    --  REAL  --  DECLARED AT 20591000
          20591610
MYMSCW    --  REAL  --  DECLARED AT 20595000
          20595080
MYMSCW    --  REAL  --  DECLARED AT 20596800
          20596945
MYMSCW    --  REAL  --  DECLARED AT 20600010
MYMSCW    --  REAL  --  DECLARED AT 20701500
          20707000
MYSELF    --  REAL ARRAY  --  DECLARED AT 00028000
          00051000
M1   --   REAL  --  DECLARED AT 05841620
         *05842410**05842930* 05843300 *05845400*
M1   --   LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06381450
          06381300  06381395
M1   --   REAL  --  DECLARED AT 08418500
         *08419100* 08437450
M1   --   REAL  --  DECLARED AT 08576000
         *08577000* 08597000
M1   --   LABEL  --  DECLARED AT 40008050
M2   --   REAL  --  DECLARED AT 05841620
         *05842410**05843000**05843500* 05844925 *05844935**05845100* 05845300  05845400  05845500
N    --   STREAM VARIABLE  --  DECLARED AT 00042000
          00043000
N    --   STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 00082000
          00083000  00086000  00088000
N    --   REAL  --  VALUE PARAMETER  --  DECLARED AT 00134125
N    --   INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00306000
         *00308000*
N    --   STREAM VARIABLE  --  DECLARED AT 00308000
          00308500
N    --   REAL  --  VALUE PARAMETER  --  DECLARED AT 00316100
N    --   INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00431000
N    --   REAL  --  VALUE PARAMETER  --  DECLARED AT 00463200
N    --   REAL  --  VALUE PARAMETER  --  DECLARED AT 00464000
N    --   REAL  --  NAME PARAMETER  --  DECLARED AT 02052800
          02052700
N    --   STREAM VARIABLE  --  DECLARED AT 02144500
         *02171000*
N    --   STREAM VARIABLE  --  DECLARED AT 02173150
          02173160
N    --   STREAM VARIABLE  --  DECLARED AT 02173300
          02173325
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N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02188000
        02206000  02206100  02217200 *02220000* 02221000  02223000  02253050  02261050  02276400
N  --  STREAM VARIABLE  --  DECLARED AT 02276400
        02276450
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02330100
        02330200
N  --  REAL  --  DECLARED AT 02361000
       *02367000* 02370000  02371000 *02373000* 02374000  02375000
N  --  REAL  --  DECLARED AT 02434120
       *02434560* 02434570
N  --  REAL  --  DECLARED AT 04552000
        04568520 *04577000* 04579000 *04590000* 04593000 *04595000**04598000**04627000* 04628000  04629000  04634200
       *04654600* 04656200  04659100
N  --  STREAM VARIABLE  --  DECLARED AT 04656200
        04656700
N  --  STREAM VARIABLE  --  DECLARED AT 04659100
        04659800 *04661700*
N  --  INTEGER  --  DECLARED AT 05702000
       *05702500* 05705000  05706000  05707000  05715000
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05839400
        05842100  05842200  05844000 *05845700*
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05846600
        05848900  05849420  05849460  05850600  05851500
N  --  INTEGER  --  DECLARED AT 05951400
        05951600  05953045  05953120  05953135 *05954800**05956300**05957500**05957650* 05962700 *05962900**05963000*
        05964000 *05969150* 05973800  05976450  05976700  05977100 *05977300* 05977700 *05979050*
N  --  STREAM VARIABLE  --  DECLARED AT 05953135
        05953150  05953155
N  --  STREAM VARIABLE  --  DECLARED AT 05964000
       *05964800* 05964900
N  --  INTEGER  --  DECLARED AT 06184000
       *06208000**06209000* 06223000  06230000 *06243100**06278000* 06280000
N  --  REAL  --  DECLARED AT 06351000
        06353510  06353541  06353670  06353720  06355000  06361100
N  --  STREAM VARIABLE  --  DECLARED AT 06355000
        06360000
N  --  STREAM VARIABLE  --  DECLARED AT 06361100
        06361300
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07002000
N  --  REAL  --  DECLARED AT 07006060
       *07108000* 07142000  07147000  07151000  07152000  07154000 *07163000* 07164000  07174000  07175100  07179000
N  --  REAL  --  DECLARED AT 07269000
       *07281000* 07284000  07290400  07290600  07292000
N  --  STREAM VARIABLE  --  DECLARED AT 07284000
        07285000
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07298000
        07303000  07305000  07333000  07346000
N  --  STREAM VARIABLE  --  DECLARED AT 07305000
        07307000
N  --  STREAM VARIABLE  --  DECLARED AT 07346000
        07348000
N  --  REAL  --  DECLARED AT 07355000
        07366000  07369000 *07370000**07371400* 07371800 *07371900* 07372200  07372800
N  --  DEFINE  --  DECLARED AT 07387000  --  OCCURS AT 07366000
        07395000  07397000
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07422000
       *07425700* 07426100  07427610  07436000  07436200  07450000  07452000  07452200
```

```
N  --  STREAM VARIABLE  --  DECLARED AT 07452200
        07452310  07491000
N  --  REAL  --  DECLARED AT 08099600  --  OCCURS AT 07490000
        08102350 *08102550* 08103050  08103200  08103500  08103650  08103700  08104900
N  --  STREAM VARIABLE  --  DECLARED AT 08285000
        08286000
N  --  REAL  --  DECLARED AT 08680000
        08681200  08690100  08690400 *08692400**08692600*
N  --  STREAM VARIABLE  --  DECLARED AT 08681200
        08683000  08919000
N  --  REAL  --  DECLARED AT 12208500  --  OCCURS AT 08918000
       *12249500* 12252000 *12299000**12301000* 12304500 *12321120* 12321130  12321140  12321150
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 12350500
N  --  STREAM VARIABLE  --  DECLARED AT 14711000
        14712000
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15169000
        15168000  15168100  15173000  15174000  15175900 *15176000* 15177000 *15183000* 15184000
N  --  STREAM VARIABLE  --  DECLARED AT 15501600  --  OCCURS AT 15414000
        15502000
N  --  STREAM VARIABLE  --  DECLARED AT 15531200
        15531700
N  --  INTEGER  --  DECLARED AT 15600500
       *15602600**15602640**15604200* 15604250
N  --  STREAM VARIABLE  --  DECLARED AT 15602600
        15602620
N  --  STREAM VARIABLE  --  DECLARED AT 15602640
        15602660
N  --  STREAM VARIABLE  --  DECLARED AT 15604250
        15604275
N  --  REAL  --  DECLARED AT 17903500
       *17925500* 17926000
N  --  REAL  --  DECLARED AT 18198000
        18226000  18229000  18245500  18247500  18248500 *18276000* 18277500 *18280000* 18466200
N  --  STREAM VARIABLE  --  DECLARED AT 18770400
N  --  REAL  --  DECLARED AT 19689000
       *19696800* 19697000  19708000  19711100  19713000  19722000  19756000  19797000
N  --  STREAM VARIABLE  --  DECLARED AT 20101300
        20101600
N  --  STREAM VARIABLE  --  DECLARED AT 20289163
        20289170  20289175
N  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20382015
        20382010 *20382058* 20382068  20382076  20382140 *20382600* 20382700
N  --  REAL  --  DECLARED AT 20703000
        20704000  20704100  20725000  20732000
N  --  REAL  --  DECLARED AT 28002600
        28073200
N  --  STREAM VARIABLE  --  DECLARED AT 28073200
        28073400
N  --  REAL  --  DECLARED AT 28203000
        28203200  28233800 *28239200* 28244600
N  --  REAL  --  DECLARED AT 28803000
        28831000  28832500 *28833500**28837500* 28839000  28852000
N  --  INTEGER  --  DECLARED AT 30904000
       *30918000* 30920000
N  --  NAME  --  DECLARED AT 36003000
        36006000
N  --  STREAM VARIABLE  --  DECLARED AT 37046190
```

```
          37046220
N  --  STREAM VARIABLE  --  DECLARED AT 37314100
N  --  REAL  --  DECLARED AT 37388400
          37394200  37405000
N  --  STREAM VARIABLE  --  DECLARED AT 37394200
          37394260  37394300  37394450  37394500
N  --  STREAM VARIABLE  --  DECLARED AT 38083000
          38084000
N  --  STREAM VARIABLE  --  DECLARED AT 38271500
          38272000
N  --  STREAM VARIABLE  --  DECLARED AT 38587000
          38587500
N  --  STREAM VARIABLE  --  DECLARED AT 38683000
          38686000
N  --  STREAM VARIABLE  --  DECLARED AT 41324800
          41324900  41325000
N  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41600000
          41600700  41601100  41601500  41605700  41606200
N  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 42474000
          42477000 *42478000* 42478400  42478600  42478800
N  --  STREAM VARIABLE  --  DECLARED AT 44203150
          44204200
N  --  STREAM VARIABLE  --  DECLARED AT 48075000
          48077000
NA  --  REAL  --  DECLARED AT 28002800
NA  --  REAL  --  DECLARED AT 28401200
         *28458800* 28459200  28460800  28461000  28465200  28468200  28468600  28472000  28476800  28477200  28480000
          28482200
NAIN  --  REAL  --  DECLARED AT 28002600
          28002800
NAIN  --  REAL  --  DECLARED AT 28401200
         *28436800* 28437400 *28453200* 28453800 *28459400**28460800* 28461000  28462000  28463200  28465200
NAM  --  REAL  --  DECLARED AT 12209000
          12225000 *12245000* 12246000  12249500  12250000  12250500  12251000  12251500  12254000  12255000  12256500
          12259000  12259500  12264000  12268000  12285500  12289500  12307000 *12321100* 12321110  12321160  12321170
NAM  --  STREAM VARIABLE  --  DECLARED AT 12225000
          12233500
NAM  --  STREAM VARIABLE  --  DECLARED AT 12307000
          12311500
NAM  --  STREAM VARIABLE  --  DECLARED AT 16854600
          16855100
NAMECNT  --  REAL  --  DECLARED AT 20566320
          20566330  20567340  20567360 *20569527**20569800**20569804**20569975**20570055* 20570120 *20570232*
NAMEIN  --  PROCEDURE  --  DECLARED AT 02603000
          06463600  06463620  08101950  08102150  08102300  08102350  08103650  08103700  08547300  08547400  09632000
          09679900  16114000  16806500  37232000  37232250
NAMS  --  REAL ARRAY  --  DECLARED AT 12213500
         *12298000**12298500**12301000**12304500* 12310000 *12321100**12321120**12321130**12321140**12321150*
NASZ  --  REAL  --  DECLARED AT 28002800
          28003000
NASZ  --  REAL  --  DECLARED AT 28401200
         *28459000* 28471600  28479600
NB  --  REAL ARRAY  --  DECLARED AT 18200000
          18227500  18228000  18228500  18232000 *18245000**18248000**18280000*
NB  --  REAL ARRAY  --  DECLARED AT 20382040
         *20382076* 20382165  20382200  20382300  20382540  20382580  20382660  20382680
NB  --  INTEGER  --  DECLARED AT 37506000
```

```
       *37511000* 37520000  37521200  37524000  37530200  37539000
NBR  --  INTEGER  --  DECLARED AT 37506000
       *37512000* 37520000  37522000  37523000  37525000  37530200  37539000
NBS  --  STREAM VARIABLE  --  DECLARED AT 08681200
        08684500  08686500
NBUF  --  REAL  --  DECLARED AT 02191600
       *02275100* 02276750
NBUFS  --  INTEGER  --  DECLARED AT 38003000
        38027000  38042000  38053000  38063500  38064000  38064400  38069000  38083000  38090000  38095000
NBUFS  --  INTEGER  --  DECLARED AT 38102300
       *38149500* 38152000  38156500 *38157500*
NBUFS  --  INTEGER  --  DECLARED AT 38200300
       *38245500* 38297500
NBUFS  --  INTEGER  --  DECLARED AT 38359000
        38370800  38377800
NBUFS  --  INTEGER  --  DECLARED AT 38544000
        38553000
NBUFS  --  INTEGER  --  DECLARED AT 38652000
        38666000  38700000  38703000  38754000
NBUFS  --  INTEGER  --  DECLARED AT 39002000
        39044000 *39084000* 39144000  39146000  39230000  39233200  39244000  39293400
NBUFS  --  INTEGER  --  DECLARED AT 41002000
       *41042000* 41197000
NCS  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17900500
        17927500
NCV  --  REAL  --  DECLARED AT 08318000
       *08319700* 08333000
NCV  --  STREAM VARIABLE  --  DECLARED AT 08333000
        08334300  08334900
NDIV64  --  STREAM VARIABLE  --  DECLARED AT 00085000
        00086000  00088000
NDIV64  --  STREAM VARIABLE  --  DECLARED AT 37394200
        37394450  37394500
NDX  --  DEFINE  --  DECLARED AT 00158100
        02328100  06205200  08538000  12419000  14370035  14370065  14370110  14370155  14370180  14411200  20092000
        20092700  20092800  20093400  20093600  20124700  20176090  20178900  20188600  28051400  37279100  44151010
        44154100  48141200
NEG  --  STREAM VARIABLE  --  DECLARED AT 12306000
        12314500
NEU  --  REAL  --  DECLARED AT 06351104
       *06380100*
NEUF  --  DEFINE  --  DECLARED AT 05780300
        05842450  05848900  05959000  06380100  06381300  20567240  22011100  40321140  41324800  44240700
NEUP  --  INTEGER  --  DECLARED AT 00166000
        04194500  04194550  05842450  05848900  05959000  06077400  06107900  06108200  06380100  06381300  16825500
        16825900  20567240  22011100  40249200  40321140  40324210  41324800 *44216910**44216940* 44240690 *44240695*
        44240700  44260500  44265500
NEU1  --  DEFINE  --  DECLARED AT 06351105
        06380400  06380850  06380900
NEU2  --  DEFINE  --  DECLARED AT 06351105
        06380400  06380950
NEVERBIT  --  DEFINE  --  DECLARED AT 00417090
NEW  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04188000
        04166000
NEW  --  LABEL  --  DECLARED AT 12214500  --  OCCURS AT 12270500
        12247500
NEWIO  --  PROCEDURE  --  DECLARED AT 04115000
```

```
        04188000  48005000
NEWLOG  --  LABEL  --  DECLARED AT 41316500  --  OCCURS AT 41320300
        41318900  41320400
NEWPRI  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02002000
        02000000  02001000 *02006000* 02007400
NEWSTART  --  LABEL  --  DECLARED AT 24042600  --  OCCURS AT 24042950
        24045300
NEXT  --  LABEL  --  DECLARED AT 02347222  --  OCCURS AT 02347330
        02347410
NEXT  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06095800
        06095600
NEXT  --  LABEL  --  DECLARED AT 07423000  --  OCCURS AT 07451000
        07436200  07438000
NEXT  --  STREAM LABEL  --  DECLARED AT 08608000  --  OCCURS AT 08620000
        08611000  08618000  16042550
NEXT  --  LABEL  --  DECLARED AT 20389000  --  OCCURS AT 20451000
        20453000  20455000  20459000  20461950  20463000  20465000  20477000  20478508  20478550  20481000  20481100
NEXT  --  LABEL  --  DECLARED AT 20566011  --  OCCURS AT 20578725
        20577525
NEXT  --  LABEL  --  DECLARED AT 28211000  --  OCCURS AT 28304200
        28258000  28260600  28262400  28270826  28297400  28302600
NEXTCONUM  --  REAL PROCEDURE  --  DECLARED AT 07001600
       *07001760* 07179220  07547000  20289144  37046470
NEXTFILE  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12642500
        12644000
NEXTL  --  LABEL  --  DECLARED AT 20566610  --  OCCURS AT 20569520
        20570580
NEXTLINK  --  INTEGER  --  DECLARED AT 08852000
        08860500 *08863000**08867000* 08931000  08932000  08934000
NEXTLINK  --  REAL  --  DECLARED AT 20012900
        20021400  20021700  20022100 *20024800* 20025600 *20027400*
NEXTLINK  --  REAL  --  DECLARED AT 20082100
        20089300  20089600  20090000
NEXTLINK  --  REAL  --  DECLARED AT 20142500
NEXTLINK  --  REAL  --  DECLARED AT 40004500
       *40046000* 40057000
NEXTMOM  --  INTEGER  --  DECLARED AT 14351200
        14351205 *14360700**14360800* 14360900 *14361100**14361300* 14364500  14370010  14370030  14370035  14370040
        14370050  14370070  14370110  14370165
NEXTNAME  --  REAL  --  DECLARED AT 12209500
        12225000 *12243500* 12290000
NEXTNAME  --  STREAM VARIABLE  --  DECLARED AT 12225000
        12233000
NEXTNAME  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28420400
        28417400
NEXTROW  --  LABEL  --  DECLARED AT 19695000
NEXTSEG  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28467000
        28471000
NEXTSLOT  --  REAL  --  DECLARED AT 00418850
        14600000  14601000  14601500 *14602500* 14603100 *14603320**14604000**18248000* 40283300  40283400 *40283600*
        40317310 *40317610*
NEXTSOURCE  --  LABEL  --  DECLARED AT 28403000  --  OCCURS AT 28457800
        28483200
NEXTWAIT  --  REAL  --  DECLARED AT 00279000
       *02095000* 04017000 *04018000* 04165000  04177000  48004000
NF  --  REAL  --  DECLARED AT 37388275
        37392000
```

```
NFO  --  REAL ARRAY  --  DECLARED AT 00158200
        02328100  06205200  08538000  12419000 *14370035**14370065**14370110**14370155**14370180* 14411200  20092000
       *20092700**20092800**20093400**20093600**20124700**20176090**20178900**20188600**28051400**37279100* 44154200
        48141200  48141500  48141600
NG  --  LABEL  --  DECLARED AT 14166200  --  OCCURS AT 14292140
        14206145
NG  --  LABEL  --  DECLARED AT 14627300
NG  --  LABEL  --  DECLARED AT 20146700  --  OCCURS AT 20176102
        20176147
NINETEENMASK  --  DEFINE  --  DECLARED AT 00081620
NINETEENNOTREADING  --  DEFINE  --  DECLARED AT 00081620
NJOBS  --  REAL  --  DECLARED AT 12357000
       *12400500* 12402000 *12413000**12417500* 12428500 *12446000* 12447500
NM  --  STREAM VARIABLE  --  DECLARED AT 12310000
        12317500
NMG  --  REAL  --  DECLARED AT 08318000
       *08320000* 08333000  08340000
NMG  --  STREAM VARIABLE  --  DECLARED AT 08333000
        08334000  08335000  08335600
NM1  --  REAL  --  DECLARED AT 28002000
        28028000 *28028110* 28032200 *28039400**28053600**28054600**28058200* 28063800
NM1  --  STREAM VARIABLE  --  DECLARED AT 28053600
        28053800
NM1  --  REAL  --  DECLARED AT 28202400
       *28228400*
NM1  --  REAL  --  DECLARED AT 28401000
       *28472000* 28473000  28473200  28473400  28474400  28474600
NM2  --  REAL  --  DECLARED AT 28002000
        28002200  28028000  28032200 *28039200**28054800* 28056000 *28072800*
NM2  --  REAL  --  DECLARED AT 28202400
        28202600 *28228200*
NM2  --  REAL  --  DECLARED AT 28401000
       *28472200* 28473000  28473200  28473400  28474400  28474600
NO  --  STREAM VARIABLE  --  DECLARED AT 06077900
       *06078500**06079400* 06079500  06079600 *06079700**06080900* 06081000 *06081300* 06081900  06082500  06083000
        06083300
NO  --  DEFINE  --  DECLARED AT 20241000
        24042925
NOAUX  --  REAL  --  DECLARED AT 22235500
        22325200
NOBACKTALK  --  DEFINE  --  DECLARED AT 00081100
NOBACKTALKMASK  --  DEFINE  --  DECLARED AT 00081100
NOCNV  --  STREAM LABEL  --  DECLARED AT 08334300  --  OCCURS AT 08334700
NOCODE  --  LABEL  --  DECLARED AT 04357600  --  OCCURS AT 04410600
        04358400  04409800
NOCONT  --  REAL  --  DECLARED AT 12506000
        12528000 *12686500* 12741500
NOCONT  --  REAL  --  DECLARED AT 12806000
NOCONT  --  REAL  --  DECLARED AT 13008000
NOCOPYMESS  --  SUBROUTINE  --  DECLARED AT 28011000
        28086000  28093400  28100800
NOCOPYMESS  --  SUBROUTINE  --  DECLARED AT 28211800
        28262400  28282400  28284000  28285200  28297000
NOCOPYMESS  --  SUBROUTINE  --  DECLARED AT 28408200
        28415800  28416000  28417200  28420200  28476600  28480400
NOFILE  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12568500
        12566500
```

```
NOFILE  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18266000
        18292600
NOGET  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13084000
        13035000  13045000  13054000  13064000  13070000  13077000
NOGOOD  --  LABEL  --  DECLARED AT 45003000  --  OCCURS AT 45132000
NOHASH  --  DEFINE  --  DECLARED AT 20247990
        20569790
NOHASH  --  DEFINE  --  DECLARED AT 28404400
        28466200
NOLBL  --  REAL  --  DECLARED AT 20397000
       *20446000**20455000* 20486000
NOLBL  --  DEFINE  --  DECLARED AT 28210400
        28256000  28268800
NOMEM  --  DEFINE  --  DECLARED AT 00081950
        02202100  20164000  24044200  24045200
NOMEMTOG  --  DEFINE  --  DECLARED AT 00081980
        24044000
NOMIX  --  STREAM LABEL  --  DECLARED AT 16041500  --  OCCURS AT 16041750
        16041850
NOMORE  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12566000
        12562500
NOMOREELS  --  LABEL  --  DECLARED AT 12514000  --  OCCURS AT 12624500
        12515000
NOMOREFILES  --  REAL SUBROUTINE  --  DECLARED AT 12580000
        12586000  12593500  12721500
NOMORERREELS  --  REAL SUBROUTINE  --  DECLARED AT 12571000
        12577000  12592500  12625000  12642500
NOMOREREELS  --  DEFINE  --  DECLARED AT 13023000
        13045000
NOMSG  --  STREAM LABEL  --  DECLARED AT 08334000  --  OCCURS AT 08335000
NOOFROWS  --  DEFINE  --  DECLARED AT 08101250
        08109100
NOPROCESSTOG  --  REAL  --  DECLARED AT 00154000
       *02037000**02258200**02376000**02434860**04677750**04687900**06116200**14358384**16126000**16856200**18581500*
       *19905320**22031000**22244000**42501550**44092000* 48023000  48042000
NORMALERROR  --  LABEL  --  DECLARED AT 00008000  --  OCCURS AT 48137000
        48103000
NORMALPROCESS  --  DEFINE  --  DECLARED AT 04670850
        04677800  04687900
NOSELECT  --  STREAM VARIABLE  --  DECLARED AT 08839500
        08846000
NOSQ  --  STREAM VARIABLE  --  DECLARED AT 06074200
        06075200  06075400
NOTCOPIED  --  DEFINE  --  DECLARED AT 28010600
        28086000  28093400  28100800
NOTCOPIED  --  DEFINE  --  DECLARED AT 28211400
        28262400  28282200  28284000  28285200  28297000
NOTCOPIED  --  DEFINE  --  DECLARED AT 28407800
        28415800  28417200  28420200  28476600  28480400
NOTERMSET  --  DEFINE  --  DECLARED AT 02110200
        02184000  04252100  06354200  06360515  12451000  14193000  15114600  15115400  16164000  17906100  17915500
        18570900  18730200  19903850  48029000
NOTFOUND  --  LABEL  --  DECLARED AT 06462200  --  OCCURS AT 06464300
        06465200  06466310
NOTHINGTODO  --  LABEL  --  DECLARED AT 00024270  --  OCCURS AT 48045000
        02008400  02050000  04236000  44282000  48017000  48038000  48056000  48084400
NOTIFYOP  --  DEFINE  --  DECLARED AT 00414000
```

```
NOTLOADINGFROMREEL1  --  REAL SUBROUTINE  --  DECLARED AT 28047600
        28048800  28056200
NOTOK  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06096000
        06092200  06094700  06095000
NOTOPEN  --  DEFINE  --  DECLARED AT 14161000
        14242000
NOTP  --  DEFINE  --  DECLARED AT 12516300
        12581000  12680250
NOTP  --  DEFINE  --  DECLARED AT 12815500
NOTREADY  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22109000
        22113000  22116000  22205000
NOTREADYMESS  --  LABEL  --  DECLARED AT 04357200  --  OCCURS AT 04381600
        04393200  04405200
NOWAIT  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04178000
        04166000
NR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00385500
        00385000  00385500
NR  --  REAL  --  DECLARED AT 19694000  --  OCCURS AT 04363000
       *19733600* 19734000  19735050
NR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37386000
        37385000  37385500  37388400  37388700 *37391000* 37395000
NR  --  STREAM VARIABLE  --  DECLARED AT 37395000
        37396000
NROWS  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00396000
        00393000  00394000
NROWS  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37421000
        37418000  37419000  37427000  37444000
NS  --  INTEGER  --  DECLARED AT 05841350
        05842475  05842700  05844110  05845100 *05845300* 05845400  05845700
NSECOND  --  PROCEDURE  --  DECLARED AT 22001000  --  FORWARD AT 02692000
        48009000
NSECONDMASK  --  DEFINE  --  DECLARED AT 00080800
        45151000  48008000
NSECONDREADY  --  DEFINE  --  DECLARED AT 00080800
        22053700  48007000
NSLATE  --  REAL  --  DECLARED AT 00023000
        02017000  48015200  48020000  48034000  48047000 *48052000* 48054000  48055000  48055200
NT  --  REAL  --  DECLARED AT 06351104
       *06380100* 06380140  06380400  06380525  06380950  06381070
NTRDY  --  LABEL  --  DECLARED AT 04357200  --  OCCURS AT 04383000
        04396400  04402600
NT1  --  REAL  --  DECLARED AT 00024000
        02004500 *02276750* 02277000 *02284000**02285000* 02286000 *02287000* 02287100  02287110 *02330200* 02330400
        04021000  04044000  04068000  04102000 *04108000* 04109000  04126000 *05842900* 05842930  05843000 *05845000*
        05845100 *05851800* 05851900 *05852350* 05852400 *05852500**05852700* 05852800  06022000 *06239000* 06240000
       *08109150**08109250* 08109300 *08460000* 08461000  08462000  09633400 *09681505**12531000* 12531500 *12635000*
       *12636000* 12637000 *12656500* 12657000 *14065000* 14070000  14074000  14342000 *14358345* 14358355 *14411820*
        14411830  14411840  14411850  14411860  14411880  14411890  14411900 *14415000* 14415100 *15084000* 15086000
       *16198000* 16199000  16696700  16827000 *16828000**16959500**18740400**18740600* 18740700  18740800  20017800
       *20092600* 20092700  20092800 *20129300* 20129400  20129700 *20129800**20171200**20191300* 20191500 *20193200*
        20193300 *20289260* 20289265 *20581950* 20582000 *20600400* 20600470 *20609150* 20609200 *20609660* 20609670
       *22019000**22020000* 22021000 *22144000* 22145000 *22145450* 22145525  24105000  24203000 *28014600* 28014800
        28015000 *28036000* 28036400 *28097100**28225000* 28225400 *28250400* 28250800 *28277600* 28278800  28279200
       *28305400* 28305600  28305800  28408400 *28415800**28416000**28417200**28420200**28425200* 28425600 *28430600*
        28430800 *28461800* 28462000  28462200 *28463800* 28464000  28464400 *28468600* 28468800 *28472000* 28472200
       *28476600**28477200* 28477400 *28480000* 28480200 *28480400**30909000* 30911000 *37523000* 37524000  37526000
       *37533000* 37535000  38103200  38201200 *41324100* 41324200 *42501050* 42501100 *42522000**42535500**44189900*
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        *44203200* 44206200  44206300 *44244000**48019000* 48028000  48032600 *48032800* 48032910  48032935  48032940
        *48032950* 48033000  48035000  48036000  48041000 *48043000**48060000* 48062000  48063000  48074000  48075000
         48076000 *48110000**48117200* 48118000 *48141200* 48141500  48141600 *48143000* 48143500
NT1  -- INTEGER  -- DECLARED AT 02133200
        *02173000**02173050* 02173100  02174000
NT1  -- STREAM VARIABLE  -- DECLARED AT 04109000
        04110000
NT1  -- INTEGER  -- DECLARED AT 06351250
        *06354200* 06360540  06360545 *06361700**06361705**06380140**06380150* 06380450 *06380600* 06380650  06380700
        *06380850**06380900*
NT1  -- STREAM VARIABLE  -- DECLARED AT 08462000
        08467000
NT1  -- STREAM VARIABLE  -- DECLARED AT 09633400
NT1  -- REAL  -- DECLARED AT 40005100
        *40016240* 40016260 *40039100**40065020* 40065040 *40078074* 40078076 *40257060**40261010**40261200**40322430*
         40322440 *40324102**40334065* 40334070  40334075  40334077  40334079
NT2  -- REAL  -- DECLARED AT 00024000
        *02285000* 02286000  02287110  02287120  02287140  04021000  04044000  04126000  05842900  05842930  05843000
        *05844935**05845000* 05845400 *05850200* 05852200  05951900 *05961800**06188000* 06189000 *06380140**06380250*
         06380400 *06380750* 06380800  06380650 *08109100* 08109200 *12627000* 12628000 *12635500* 12637000 *14358360*
         14358370 *16197000* 16199000 *16826600* 16826800  16826900 *18740400**18740500* 18740900  20013900  20014000
        *20031500**20043800* 20083100  20083200 *20106000* 20143500  20143600 *20157700* 24106000  24204000 *28278600*
         28278800 *28425200* 28425400 *28425600**28463200* 28463400  28464000  28464200 *37521000**37524000* 37526000
         37527000 *37530200* 37532000  37542000 *38104100* 38104300  38104800 *38202100* 38202300  38202800 *48062000*
         48064000  48065000  48070000  48071000  48080000 *48117200* 48118000  48119000
NT2  -- REAL  -- DECLARED AT 40005100
        *40261010* 40261040  40261046 *40321200* 40324104  40324200  40324210 *40334060* 40334077  40334079
NT3  -- REAL  -- DECLARED AT 00024000
         00024060  04021000  04044000  04068000  04116000  04126000  04355600 *05844935* 05845400  05847700  05952000
        *18740400* 18740500 *18740700* 20017900 *20050000**20059400**20121800**20125000**20153700* 20153900  24107000
         24205000  28011200 *28086000**28093400**28100800* 28212000 *28262400**28282400**28284000**28285200**28297000*
        *37526000* 37527000 *48063000**48066000* 48070000
NT3  -- INTEGER  -- DECLARED AT 06351250
        *06380150* 06380200  06380400 *06380750* 06380900
NT3  -- STREAM VARIABLE  -- DECLARED AT 20153700
NT3  -- REAL  -- DECLARED AT 40005100
         40278000  40311000 *40321140* 40321200  40334060  40334065
NT4  -- REAL  -- DECLARED AT 00024000
         00034000 *02283000* 02284000  02287000  02287100  02287120  04068000  04116000  04126000 *04428600* 05841620
         05847700  05952000 *06200000* 06201000  06202000 *18780700* 18780900 *20050000**20059400**20121800**20125000*
         24108000  24206000 *37521100**37527000* 37538000  37538500  37542000 *48054000* 48054400 *48055000**48144000*
         48145000
NT4  -- INTEGER  -- DECLARED AT 06351250
        *06380150**06380200* 06380250  06380400 *06380800* 06380850
NT4  -- REAL  -- DECLARED AT 40005100
        *40334070* 40334077  40334079
NT5  -- REAL  -- DECLARED AT 00024000
         04126000  05841620  05847700  05952000 *06380750* 06380850  06380900  24109000  24207000 *37538500*
NT6  -- REAL  -- DECLARED AT 00024000
         04068000  04127000  04355800  05841615  05847700  05952000  24110000 *36009000* 37047100  37047600  37047605
         37047670  37048000  38015400
NT7  -- REAL  -- DECLARED AT 00024000
         04126000  05847700  05952000
NU   -- LABEL  -- DECLARED AT 12214500  -- OCCURS AT 12247000
         12255500
NULCV -- STREAM LABEL  -- DECLARED AT 08334900  -- OCCURS AT 08335800
NULL -- LABEL  -- DECLARED AT 04705000  -- OCCURS AT 04709000
```

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        04725000
NULLINT  --  LABEL  --  DECLARED AT 44207250  --  OCCURS AT 44246500
        44243500  44249000
NULLMIX  --  REAL SUBROUTINE  --  DECLARED AT 09603000
        09614000  09615000  09635000
NULMS  --  STREAM LABEL  --  DECLARED AT 08335000  --  OCCURS AT 08335400
NUM  --  REAL  --  DECLARED AT 12505000
        12554500  12619000 *12686500**12745000*
NUM  --  REAL  --  DECLARED AT 12805000
NUM  --  REAL  --  DECLARED AT 13006000
NUM  --  REAL  --  DECLARED AT 41327700
       *41330100* 41330200  41331700  41331900  41332000 *41332600* 41332800
NUMAINTMESS  --  REAL  --  DECLARED AT 04121250
       *04137290**41311100* 41322400 *41332950**44188000*
NUMB  --  STREAM VARIABLE  --  DECLARED AT 08285000
        08291100
NUMBUFFS  --  REAL  --  DECLARED AT 04668500
       *04674400* 04674450  04677250  04677650  04682650
NUMENT  --  DEFINE  --  DECLARED AT 05780040
        05845700  05974000  06101200
NUMENTM  --  DEFINE  --  DECLARED AT 05780040
        05844920  05850110  05850200  05961200  05961800  06109300  06380250  06380750  16826900
NUMESS  --  REAL  --  DECLARED AT 02031000
       *02122000**02175003* 02176000  02258000 *16235000**44188000*
NUMF  --  DEFINE  --  DECLARED AT 12516250
        12686500  12706500
NUMF  --  DEFINE  --  DECLARED AT 12815400
NUMOPT  --  DEFINE  --  DECLARED AT 28407400
        28458400  28470000  28474000  28478400
NUMOPTS  --  DEFINE  --  DECLARED AT 08100500
        08103150  08114050
NUMRECS  --  REAL  --  DECLARED AT 04668500
       *04674225* 04677450  04677550  04685750
NWORDS  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00367000
        00365000  00366000
NX  --  REAL  --  DECLARED AT 15402000
       *15420000* 15422000  15424000  15426000 *15438040* 15438060
NXDISK  --  REAL  --  DECLARED AT 04121350
       *04137100* 04137160  04137202  04137215  04137220  04137250  04137275  04137280 *44188200*
NXT  --  LABEL  --  DECLARED AT 15600600  --  OCCURS AT 15602200
        15601200
NXT  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28472800
        28474400
NYLONZIPPER  --  REAL ARRAY  --  DECLARED AT 02113085
       *14541090* 14541130 *18522500* 18523400 *20610260**28439600* 28440800  44160500
N1  --  STREAM VARIABLE  --  DECLARED AT 06195105
        06195135
N1  --  REAL  --  DECLARED AT 20566100
N1  --  REAL  --  DECLARED AT 20581000
N1  --  REAL  --  DECLARED AT 20584000
N1  --  REAL  --  DECLARED AT 20586800
        20588400  20588600
N1  --  REAL  --  DECLARED AT 20589800
N1  --  REAL  --  DECLARED AT 20591000
       *20593400* 20593450
N1  --  REAL  --  DECLARED AT 20595000
N1  --  REAL  --  DECLARED AT 20596800
```

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N1   --  REAL  --  DECLARED AT 20600010
N1   --  REAL  --  DECLARED AT 20701500
N1   --  REAL  --  DECLARED AT 28803000
         28832500 *28836000* 28839000  28852000
N1   --  INTEGER  --  DECLARED AT 37422100
        *37428100* 37429000 *37430000* 37433000
N2   --  STREAM VARIABLE  --  DECLARED AT 06195105
N2   --  REAL  --  DECLARED AT 20566100
N2   --  REAL  --  DECLARED AT 20581000
N2   --  REAL  --  DECLARED AT 20584000
N2   --  REAL  --  DECLARED AT 20586800
N2   --  REAL  --  DECLARED AT 20589800
N2   --  REAL  --  DECLARED AT 20591000
        *20593400* 20593450
N2   --  REAL  --  DECLARED AT 20595000
N2   --  REAL  --  DECLARED AT 20596800
N2   --  REAL  --  DECLARED AT 20600010
N2   --  REAL  --  DECLARED AT 20701500
N3   --  REAL  --  DECLARED AT 20566100
N3   --  REAL  --  DECLARED AT 20581000
N3   --  REAL  --  DECLARED AT 20584000
N3   --  REAL  --  DECLARED AT 20586800
N3   --  REAL  --  DECLARED AT 20589800
N3   --  REAL  --  DECLARED AT 20591000
        *20593400* 20593450  20593500
N3   --  REAL  --  DECLARED AT 20595000
N3   --  REAL  --  DECLARED AT 20596800
N3   --  REAL  --  DECLARED AT 20600010
N3   --  REAL  --  DECLARED AT 20701500
N4   --  NAME  --  DECLARED AT 18500500
         18523700  18525600  18527300  18527700
N4   --  NAME  --  DECLARED AT 18700500
         18720100  18720400  18720900  18780100  18780300  18780400  18780600  18790300  18800100  18800300  18850100
N4   --  NAME  --  DECLARED AT 19505000
         19582000  19583000
N4   --  REAL  --  DECLARED AT 20511150
        *20511181* 20511315  20511320  20511665
N4   --  REAL  --  DECLARED AT 20566100
N4   --  REAL  --  DECLARED AT 20581000
N4   --  REAL  --  DECLARED AT 20584000
N4   --  REAL  --  DECLARED AT 20586800
N4   --  REAL  --  DECLARED AT 20589800
N4   --  REAL  --  DECLARED AT 20591000
N4   --  REAL  --  DECLARED AT 20595000
N4   --  REAL  --  DECLARED AT 20596800
N4   --  REAL  --  DECLARED AT 20600010
N4   --  REAL  --  DECLARED AT 20701500
N5   --  NAME  --  DECLARED AT 18500500
         18552800  18581100  18581200  18581300  18581400
N5   --  NAME  --  DECLARED AT 18700500
        *18780300* 18780400  18780800
N5   --  NAME  --  DECLARED AT 19505000
N6   --  NAME  --  DECLARED AT 18500500
N6   --  NAME  --  DECLARED AT 18700500
N6   --  NAME  --  DECLARED AT 19505000
0    --  STREAM VARIABLE  --  DECLARED AT 08605000
         08613000  08614000
```

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O  --  STREAM VARIABLE  --  DECLARED AT 08660000
       08662000
OBJOBINPUTAREAV  --  DEFINE  --  DECLARED AT 00017574
OBJTYPE  --  LABEL  --  DECLARED AT 38364000  --  OCCURS AT 38530000
       38485000
OC  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16606000
       16366000
OCCUPIED  --  DEFINE  --  DECLARED AT 40008210
       40017280  40027250  40072000  40321500
OCTADF  --  DEFINE  --  DECLARED AT 04243200
       04251600  04251800
OE  --  DEFINE  --  DECLARED AT 28008000
       28011832  28013600
OE  --  DEFINE  --  DECLARED AT 28209000
       28266400  28285600  28296600
OF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
       00374000  00375000
OF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
       37177000  37178000  37225100
OFF  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04086000
OIOD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04255200
       04255100  04255200
OIOD  --  REAL  --  DECLARED AT 04552000
       04568340 *04570000* 04573000  04574000  04582000  04585000  04588010  04588020  04588030  04588040  04588070
       04588130  04588250  04588320  04588460  04588540  04588550  04599000  04606000  04608000  04635000  04638200
       04638800  04647050  04647100  04648150  04651500  04651600  04651700 *04654800**04657200* 04658200
OIOD  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04667050
       04667000  04667050  04673650  04675900  04676000  04676300  04676500  04678750  04679500  04679750  04682150
      *04682550* 04682750  04683000  04683100  04683950  04684050  04684300  04686450
OK  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04177000
       04128000  04171200
OK  --  STREAM LABEL  --  DECLARED AT 04331800  --  OCCURS AT 04332200
OK  --  LABEL  --  DECLARED AT 05702000  --  OCCURS AT 05715000
       05708000
OK  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06088400
       06090800
OK  --  LABEL  --  DECLARED AT 08284000  --  OCCURS AT 08298200
       08295600
OK  --  STREAM VARIABLE  --  DECLARED AT 08437550
      *08438100*
OK  --  STREAM VARIABLE  --  DECLARED AT 08597050
      *08597600*
OK  --  LABEL  --  DECLARED AT 08704500  --  OCCURS AT 08716800
       08709500  08711200
OK  --  STREAM LABEL  --  DECLARED AT 14422000  --  OCCURS AT 14425000
OK  --  STREAM LABEL  --  DECLARED AT 16041550  --  OCCURS AT 16042000
OK  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28290600
       28294200  28294600
OK  --  DEFINE  --  DECLARED AT 28404600
       28415000  28418800  28419400  28419800  28470200  28474200
OK  --  REAL  --  NAME PARAMETER  --  DECLARED AT 36001000
       36005000  36007000
OKBOUNDS  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06091100
       06087700
OKINUSE  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06096200
       06094500
OKSEGZEROWRITE  --  REAL  --  DECLARED AT 00422100
```

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        04004160 *0963900₁**0964600₁**09680229**09682611**4025601₀**40261210**44245999**4424600₁*
OL  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16525000
        16365000
OLA  --  STREAM VARIABLE  --  DECLARED AT 12307500
        12316000
OLAY  --  REAL PROCEDURE  --  DECLARED AT 22228000  --  FORWARD AT 02052500
        02434520  18841700  18844600 *22243000**22390000* 24034300  24038200  44151950  44154070  44202119
OLAY  --  REAL  --  DECLARED AT 12358500
       *12425000* 12426500  12473040
OLAYDISK  --  REAL  --  DECLARED AT 20012700
OLAYDISK  --  REAL  --  DECLARED AT 20081900
        20127800  20128₁00 *20128200*
OLAYDISK  --  REAL  --  DECLARED AT 20142300
        20158600 *20159₁00* 20210600
OLAYINDX  --  DEFINE  --  DECLARED AT 12216000
        12249500  12273500
OLAYINDX  --  DEFINE  --  DECLARED AT 12366500
        12420500  12422000  12459000  12462000
OLAYIO  --  REAL  --  DECLARED AT 04260200
       *04284600* 04299600  04310200  04316400  04333400
OLAYIO  --  REAL  --  DECLARED AT 06004000
       *06004010* 06016₁00  06018000
OLAYMASK  --  REAL  --  DECLARED AT 00336000
       *06424000* 14360400 *14360500**20128400* 24038₁00  24165000 *24166000*
OLAYTIME  --  REAL ARRAY  --  DECLARED AT 00134120
        06194900  06195118  06205050  12421000  12423000 *17922500**20179220**22429230* 44163030
OLAYTOG  --  REAL  --  DECLARED AT 12210000
       *12247000**12265000* 12307500
OLAYTOG  --  STREAM VARIABLE  --  DECLARED AT 12307500
        12315500
OLDIDLETIME  --  REAL  --  DECLARED AT 00430900
        02371000 *02372000**06192000* 06193000 *12697000**45128000**48124000*
OLDONE  --  REAL  --  DECLARED AT 18197000
        18276000  18276500
OLDQ  --  NAME  --  DECLARED AT 02057500
OLDU  --  REAL  --  DECLARED AT 04668550
       *04673750* 04682450 *04684950* 04685200  04685250  04685500  04685550
ON  --  LABEL  --  DECLARED AT 04069000  --  OCCURS AT 04093000
        04076000
ON  --  LABEL  --  DECLARED AT 07355100  --  OCCURS AT 07372900
        07371700  07372600
ON  --  LABEL  --  DECLARED AT 08319000  --  OCCURS AT 08331000
        08326000  08330000
ON  --  LABEL  --  DECLARED AT 19901600  --  OCCURS AT 19905340
        19904360
ON  --  LABEL  --  DECLARED AT 28403000  --  OCCURS AT 28428400
        28432000
ON  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37100000
        37098000
ON  --  STREAM LABEL  --  DECLARED AT 37394460  --  OCCURS AT 37394550
ON  --  LABEL  --  DECLARED AT 38663000  --  OCCURS AT 38707000
        38704000
ON  --  LABEL  --  DECLARED AT 41007000
ONE  --  STREAM VARIABLE  --  DECLARED AT 08713250
        08713500
ONF  --  STREAM VARIABLE  --  DECLARED AT 12575000
        12575500
```

```
ONE  --  STREAM VARIABLE  --  DECLARED AT 12582500
        12583000
ONE  --  STREAM VARIABLE  --  DECLARED AT 12631000
        12631500
ONE  --  STREAM LABEL  --  DECLARED AT 16038900  --  OCCURS AT 16039600
ONE  --  STREAM VARIABLE  --  DECLARED AT 28444200
ONE  --  STREAM VARIABLE  --  DECLARED AT 38608500
        38608600
ONECHR  --  STREAM LABEL  --  DECLARED AT 08810000  --  OCCURS AT 08812000
ONEOHONE  --  REAL  --  DECLARED AT 02024000
        48101000
ONEOHTWO  --  REAL  --  DECLARED AT 02024000
        48107000  48141100  48142000  48142200
ONEXCEPTION  --  REAL  --  DECLARED AT 19693000
       *19696600* 19796000
ONN  --  LABEL  --  DECLARED AT 37180650  --  OCCURS AT 37195300
        37195280
ONV  --  DEFINE  --  DECLARED AT 20239100
        20567271  20569846  20569860  20570462
OP  --  REAL  --  DECLARED AT 08626000
        08632000  08658000  08660000  08667000
OP  --  STREAM VARIABLE  --  DECLARED AT 08660000
        08661000
OPEN  --  LABEL  --  DECLARED AT 14166000  --  OCCURS AT 14243000
        14261000
OPEN  --  LABEL  --  DECLARED AT 14627300  --  OCCURS AT 14659000
        14631000
OPEN  --  DEFINE  --  DECLARED AT 20219300
        20593060  38192500  38299000
OPENEXCLUSIVE  --  LABEL  --  DECLARED AT 18204000  --  OCCURS AT 18341000
        18212000  18349000  18349800
OPENINPUT  --  LABEL  --  DECLARED AT 18203000  --  OCCURS AT 18319000
        18211000
OPENIO  --  DEFINE  --  DECLARED AT 38385400
        38389300
OPENOUTPUT  --  LABEL  --  DECLARED AT 18203000  --  OCCURS AT 18323000
        18211000  18331000
OPENPROTECT  --  LABEL  --  DECLARED AT 18210300  --  OCCURS AT 18349100
        18220000
OPENS  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606300
        20597900
OPENSHARED  --  LABEL  --  DECLARED AT 18203000  --  OCCURS AT 18307000
        18211000  18318000
OPENWRITELOCK  --  LABEL  --  DECLARED AT 18203000  --  OCCURS AT 18332000
        18211000  18340000
OPNBIT  --  DEFINE  --  DECLARED AT 00417030
OPNMESS  --  DEFINE  --  DECLARED AT 00407000
        02668600  04681850  07074200  08714340  28032200  38103600  38201600  38232000
OPSETAREAV  --  DEFINE  --  DECLARED AT 00017340
OPT  --  STREAM VARIABLE  --  DECLARED AT 08681200
        08684500 *08687000*
OPTER  --  REAL  --  DECLARED AT 08626000
       *08631000* 08631100  08632000  08660000  08674000
OPTER  --  STREAM VARIABLE  --  DECLARED AT 08632000
        08642000
OPTER  --  REAL  --  DECLARED AT 08680000
        08681200 *08690000* 08690020  08690100  08690400  08696000
```

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OPTER  --  STREAM VARIABLE  --  DECLARED AT 08681200
        08683000
OPTER  --  STREAM VARIABLE  --  DECLARED AT 08690100
        08690180
OPTION  --  REAL  --  DECLARED AT 00297000
        00656600  02257000  02287245  02668600  04105500  04105510  04129590 *04413400* 04588010  04654200  04655000
        04663100  04681850  06353551  06353580 *06353590* 06360515  06463260  07074200  07253100  07351000  07419200
        08044500  08258800 *08671000* 08681200  08714340  12528000  12707750  12753000  12843600  12878000  12890100
        14430400  14581500  17914100  18439125  18540120  19685456  20030760  20034000  20043000  20100700  20100900
        20105000  20118370  20152200  20152300  20174400  20511420  20511720  20575050  20575100  20575200  20575600
        20577475  20577775  20577925  20578550  20585375  20587550  20588900  20594350  20602515  20767000  22111500
        22158000  22206000  22209400  28032200  28264600  28270820  30930000  36006500  37046735  37225800  38078000
        38103600  38103700  38201600  38201700  38232000  38256500  38288100  38289100  38590200  38592100  38594100
        38609100  38610250  38737000  38741000  38742100  39092070  39092150  41191200  41191300  41333090 *44182200*
       *44214000* 44280100  45135100  45135160
OPTIONAL  --  INTEGER  --  DECLARED AT 38005000
       *38063500**38064000**38064400**38069000* 38074000  38090000  38095000
OPTIONAL  --  INTEGER  --  DECLARED AT 38102500
        38113500
OPTIONAL  --  INTEGER  --  DECLARED AT 38200500
OPTIONAL  --  INTEGER  --  DECLARED AT 39003000
       *39091000*
OPTIONS  --  LABEL  --  DECLARED AT 08100350  --  OCCURS AT 08103900
        08103200  08114950
OPTIONSZ  --  DEFINE  --  DECLARED AT 00438000
        08631000  08631100  08690000  08690020
OPTN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 18156000
        18155000  18156000  18272200 *18272300* 18273020 *18273030* 18273060  18274000  18288000  18289000  18290000
        18292100  18293000  18306000 *18402000* 18422000  18429000  18431100  18431300  18431700  18432000  18432100
        18432150  18432200  18444500  18460500
OPTN  --  REAL  --  DECLARED AT 20511150
       *20511306* 20511312  20511320  20511340  20511363  20511364  20511365 *20511370* 20511420  20511455  20511470
        20511515  20511520  20511525  20511550  20511580  20511610 *20511666* 20511720
OPTN  --  REAL  --  DECLARED AT 20566100
       *20566817* 20574100  20574875 *20576975* 20577000  20577050 *20577100* 20579900  20580000
OPTN  --  REAL  --  DECLARED AT 20581000
        20581250
OPTN  --  REAL  --  DECLARED AT 20584000
       *20585700* 20585705  20585710 *20585725* 20585750  20585800  20585850
OPTN  --  REAL  --  DECLARED AT 20586800
       *20588200*
OPTN  --  REAL  --  DECLARED AT 20589800
OPTN  --  REAL  --  DECLARED AT 20591000
       *20592250* 20592750 *20593000* 20593060  20593200
OPTN  --  REAL  --  DECLARED AT 20595000
OPTN  --  REAL  --  DECLARED AT 20596800
OPTN  --  REAL  --  DECLARED AT 20600010
        20604050  20604550  20604700  20604750 *20605320* 20605480
OPTN  --  REAL  --  DECLARED AT 20701500
OPTNN  --  REAL  --  DECLARED AT 20566100
OPTNN  --  REAL  --  DECLARED AT 20581000
OPTNN  --  REAL  --  DECLARED AT 20584000
OPTNN  --  REAL  --  DECLARED AT 20586800
OPTNN  --  REAL  --  DECLARED AT 20589800
OPTNN  --  REAL  --  DECLARED AT 20591000
        20591650
OPTNN  --  REAL  --  DECLARED AT 20595000
```

```
OPTNN  --  REAL  --  DECLARED AT 20596800
OPTNN  --  REAL  --  DECLARED AT 20600010
      *20603900**20606050**20606100**20606350**20606600* 20606610 *20606800**20609500*
OPTNN  --  REAL  --  DECLARED AT 20701500
OPTNO  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20591700
       20591600
OPTN1  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20592400
       20591600
OPTN2  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20592900
       20591600  20592200
OREEL  --  REAL  --  DECLARED AT 28002600
      *28072400**28083200*
OREEL  --  STREAM VARIABLE  --  DECLARED AT 28083200
       28083400
OREEL  --  REAL  --  DECLARED AT 28203000
OT  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16581000
       16366000
OTHERCLOSE  --  PROCEDURE  --  DECLARED AT 38648000
       41055000
OTHERFILEOPENIN  --  PROCEDURE  --  DECLARED AT 38102000
       39095000  39155000  39236100
OTHERFILEOPENOUT  --  PROCEDURE  --  DECLARED AT 38200000
       39095000  39155000
OU  --  REAL  --  DECLARED AT 07006090
      *07090000* 07091100 *07098000* 07104000  07110000  07118510  07122000  07125500  07128000  07223000  07224000
       07227000  07231000  07234000  07237000
OU  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16087000
       16062000
OU  --  REAL  --  DECLARED AT 28002400
       28011820  28011840  28011850  28012010  28012020  28012030  28012040  28012060  28041000  28041400  28044800
       28046000  28047000 *28068400**28071200* 28071800 *28073000* 28074000  28074050  28074600  28082000  28082200
       28082400  28082800 *28084000* 28084200  28084250  28087200  28091800  28095000  28095400  28096400  28096600
OU  --  REAL  --  DECLARED AT 28202800
       28203000  28232200  28232600  28244400 *28246200* 28255600  28256400  28256800  28258400  28261200  28263400
       28266200  28304590  28304600  28306500  28306600
OUC  --  REAL  --  DECLARED AT 28003000
OUC  --  REAL  --  DECLARED AT 28203400
      *28240400**28244400*
OUKID  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37046860
       37047670
OUT  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06114800
       06075400  06075500  06076500  06081900  06082500  06083000  06083300  06114600
OUTAPFPARITY  --  DEFINE  --  DECLARED AT 28009400
       28092000
OUTAPFPARITY  --  DEFINE  --  DECLARED AT 28210000
       28242800  28259600  28260000
OUTBUFF  --  REAL  --  DECLARED AT 07006010
      *07095000**07107000* 07139512  07139575  07140000  07151000  07152000 *07166000* 07167000 *07169000**07173000*
       07176000
OUTBUFFOLD  --  REAL  --  DECLARED AT 07006030
      *07095000* 07107000  07166000  07173000  07239000
OUTIT  --  LABEL  --  DECLARED AT 17902500  --  OCCURS AT 17919100
       17906300
OUTPUTLABEL  --  PROCEDURE  --  DECLARED AT 08439000
       16526000
OUTR  --  LABEL  --  DECLARED AT 20566610  --  OCCURS AT 20576600
       20574875
```

```
OUTSW  --  SWITCH LABEL  --  DECLARED AT 39050000
        39094500
OVSEARCH  --  LABEL  --  DECLARED AT 24032800  --  OCCURS AT 24036600
        24037700  24038600
OWNBIT  --  FIELD  --  DECLARED AT 00061045
        31010000
OWT  --  LABEL  --  DECLARED AT 02189000  --  OCCURS AT 02276750
        02276150  02276270
OWT  --  STREAM LABEL  --  DECLARED AT 04679250  --  OCCURS AT 04679350
OWT  --  STREAM LABEL  --  DECLARED AT 04680600  --  OCCURS AT 04680700
OWT  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37035000
        37022100  37029000  37032000
OWT  --  STREAM LABEL  --  DECLARED AT 37394280  --  OCCURS AT 37394560
OXIT  --  STREAM LABEL  --  DECLARED AT 08335600  --  OCCURS AT 08339000
P  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02393500
        02393400
PA  --  LABEL  --  DECLARED AT 18701010  --  OCCURS AT 18710240
        18701200
PACK  --  LABEL  --  DECLARED AT 20597880  --  OCCURS AT 20609420
        20597900
PACKET  --  DEFINE  --  DECLARED AT 20219310
        20600130  20603565  20608076
PACKETACT  --  DEFINE  --  DECLARED AT 02113089
        02347250  02347280  07372320  07478100  18710246  19774750  20608850  20609570  20609670
PACKETCARD  --  REAL SUBROUTINE  --  DECLARED AT 07029000
        07040000  07118500  07123500  07139510  07222100
PACKETERR  --  DEFINE  --  DECLARED AT 02113090
        02347260  02347340  18710258  18710260  18710274  20608116  20608140  20608790  38806200
PACKETFREE  --  DEFINE  --  DECLARED AT 02133130
        02173085  02173090  02173375
PACKETMASK  --  DEFINE  --  DECLARED AT 02133140
        02173085
PACKETPAGE  --  DEFINE  --  DECLARED AT 02113086
        02173075  02173087  02173265  02173360  02173364  07417700  38608910  39092165
PACKETPRD  --  DEFINE  --  DECLARED AT 02113088
        07417100  37046400  37046430
PACKETREC  --  DEFINE  --  DECLARED AT 02113087
        02173095  02173366  02173370
PACK2  --  LABEL  --  DECLARED AT 20597880  --  OCCURS AT 20608610
        20599100  20608142  20608760  20609450
PADDR  --  INTEGER  --  DECLARED AT 19696000
        *19720000**19741000* 19754000
PADDR  --  REAL  --  DECLARED AT 20566100
PADDR  --  REAL  --  DECLARED AT 20581000
        20581550  20581800 *20583250* 20583350
PADDR  --  REAL  --  DECLARED AT 20584000
PADDR  --  REAL  --  DECLARED AT 20586800
        *20587150*
PADDR  --  REAL  --  DECLARED AT 20589800
PADDR  --  REAL  --  DECLARED AT 20591000
PADDR  --  REAL  --  DECLARED AT 20595000
PADDR  --  REAL  --  DECLARED AT 20596800
PADDR  --  REAL  --  DECLARED AT 20600010
        20604850
PADDR  --  REAL  --  DECLARED AT 20701500
PAGEADDR  --  INTEGER  --  DECLARED AT 20289040
        20289135 *20289150* 20289255  20289325  20289365  20289510  20289580
```

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PAGEFULL  --  DEFINE  --  DECLARED AT 02113092
        02173230
PAGEJECT  --  SUBROUTINE  --  DECLARED AT 12597000
PAGESIZE  --  DEFINE  --  DECLARED AT 02113091
        02173230  20289120  20289125  20289150
PAP  --  REAL ARRAY  --  DECLARED AT 28004600
PAP  --  REAL ARRAY  --  DECLARED AT 28401800
        28425000  28425200  28447800  28448000  28448400 *28448800**28449000**28449200**28468600* 28468800  28469200
       *28472600* 28473200 *28477200* 28477400  28477800
PAPER  --  LABEL  --  DECLARED AT 04358000  --  OCCURS AT 04408400
        04358600
PAPER  --  DEFINE  --  DECLARED AT 20248000
PAPER  --  LABEL  --  DECLARED AT 22064500  --  OCCURS AT 22199000
        22066000
PAPERPUNCH  --  LABEL  --  DECLARED AT 04358000  --  OCCURS AT 04406800
        04358600
PAPERPUNCH  --  LABEL  --  DECLARED AT 22064500  --  OCCURS AT 22218000
        22066000
PARAMETER  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02014000
        02012000  02013000  02018000
PARERR  --  LABEL  --  DECLARED AT 12813000  --  OCCURS AT 12891500
        12814000
PARERR  --  DEFINE  --  DECLARED AT 13029000
        13053000  13063000
PARERR  --  LABEL  --  DECLARED AT 28211000
PARITY  --  REAL  --  DECLARED AT 02434125
       *02434176* 02434780
PARITY  --  REAL  --  DECLARED AT 04258200
       *04300000* 04300500  04302600
PARITY  --  LABEL  --  DECLARED AT 14627200  --  OCCURS AT 14636000
        14631000
PARM  --  NAME  --  DECLARED AT 19691000
       *19697000* 19714000  19723000 *19724000* 19727000 *19728000* 19757000  19761000  19762000 *19797000*
PASS  --  LABEL  --  DECLARED AT 20146600  --  OCCURS AT 20189100
        20146900  20159900  20164000  20164700  20165120  20165300  20168200  20176126
PASSING  --  DEFINE  --  DECLARED AT 20019200
        20029300
PASSING  --  DEFINE  --  DECLARED AT 20088100
PASSING  --  DEFINE  --  DECLARED AT 20148300
        20189300
PASSLEVEL  --  REAL  --  DECLARED AT 20014400
        20014500  20014600 *20023800**20036800*
PASSLEVEL  --  REAL  --  DECLARED AT 20083600
        20083700  20083800
PASSLEVEL  --  REAL  --  DECLARED AT 20144000
        20144100  20144200  20164700
PASSTWO  --  REAL  --  DECLARED AT 06068900
        06089700  06091500  06094000  06110700  06112500 *06112700**06113100*
PATCHLEVEL  --  DEFINE  --  DECLARED AT 00005030
        15501500  20289390  41320000  41322000  41334000  44203000
PATTERN  --  REAL  --  DECLARED AT 04554700
        04655000  04656100  04658500
PATTERNWORD  --  REAL  --  DECLARED AT 04554700
PATTERN1  --  REAL  --  DECLARED AT 04554700
PATTERN2  --  REAL  --  DECLARED AT 04554700
PB  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16528000
        16365000
```

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PBCOUNT  --  REAL  --  DECLARED AT 02052200
       *07417300* 08267000 *08269900**08297600**14599900**18442000**20578575**38609000**40309100* 40309200  40320100
        40320200
PBCOUNT  --  STREAM VARIABLE  --  DECLARED AT 40320200
        40320300
PBD  --  REAL  --  DECLARED AT 08255500
        08256450 *08256500* 08259225  08268500
PBD  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38644000
        38608200  38610100
PBD  --  LABEL  --  DECLARED AT 41004000
PBDBUF  --  DEFINE  --  DECLARED AT 08101130
        08112175
PBDRECS  --  DEFINE  --  DECLARED AT 08699300
        08715000  08718000
PBDREL  --  DEFINE  --  DECLARED AT 00416550
        08714340  38232000  38610250
PBDROWSZ  --  DEFINE  --  DECLARED AT 08699100
        08714110  08714130  08716010  08716200  37046620  38598100  38599000
PBDTOG  --  REAL  --  DECLARED AT 08100200
       *08105250* 08107100  08111850
PBDTOTRECS  --  DEFINE  --  DECLARED AT 08699450
        08708000  08709400  08711600
PBDTU  --  DEFINE  --  DECLARED AT 08101120
        08112175
PBDTUANDBUF  --  DEFINE  --  DECLARED AT 08101110
        08112175
PBIO  --  PROCEDURE  --  DECLARED AT 08700000  --  FORWARD AT 02178500
        02275650  08178000  08729000  38574000
PBIT  --  FIELD  --  DECLARED AT 00062060
        02216510  14218040  14358320  14358392  16854100  18580100  19704100  19764000  19788000  20195600  20196600
        22356150  22365150  31007000  31017300  42478200  42485000  48032200  48032400
PBREC  --  REAL  --  DECLARED AT 07408100
       *07417500**07417900* 07418000  07418100  07418200  07418300  07418500  07418850  07418900  07419400
PBS  --  LABEL  --  DECLARED AT 38201300  --  OCCURS AT 38245500
        38257000
PBS  --  LABEL  --  DECLARED AT 39006100
PBT  --  DEFINE  --  DECLARED AT 04670900
        04674100  04674200  04674225  04675300  04679050  04679550  04680350  04680850
PBT  --  REAL  --  DECLARED AT 08255500
       *08256500* 08259830  08259840  08259850
PCOPY  --  REAL  --  DECLARED AT 12507500
       *12680250**12722000*
PCOPY  --  REAL  --  DECLARED AT 12807500
PCOPY  --  REAL  --  DECLARED AT 13011000
PCPY  --  STREAM VARIABLE  --  DECLARED AT 08285000
       *08291325*
PD  --  DEFINE  --  DECLARED AT 08100550
        08104550  08106020
PD  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16746000
        16704000  16742500  16743500  16744500
PDEX  --  REAL  --  DECLARED AT 20566100
PDEX  --  REAL  --  DECLARED AT 20581000
        20581700  20581750 *20582600* 20583150  20583250  20583450  20583500
PDEX  --  REAL  --  DECLARED AT 20584000
PDEX  --  REAL  --  DECLARED AT 20586800
       *20587150*
PDEX  --  REAL  --  DECLARED AT 20589800
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PDEX  --  REAL  --  DECLARED AT 20591000
PDEX  --  REAL  --  DECLARED AT 20595000
PDEX  --  REAL  --  DECLARED AT 20596800
PDEX  --  REAL  --  DECLARED AT 20600010
        20604850
PDEX  --  REAL  --  DECLARED AT 20701500
PE  --  LABEL  --  DECLARED AT 18701010  --  OCCURS AT 18710250
        18701200
PEQN  --  REAL ARRAY  --  DECLARED AT 20566100
PEQN  --  REAL ARRAY  --  DECLARED AT 20581000
       *20581650**20581700**20581750* 20581800
PEQN  --  REAL ARRAY  --  DECLARED AT 20584000
PEQN  --  REAL ARRAY  --  DECLARED AT 20586800
        20588400  20588700  20588701  20588702  20588740  20588746  20588747  20589250  20589300  20589480
PEQN  --  REAL ARRAY  --  DECLARED AT 20589800
PEQN  --  REAL ARRAY  --  DECLARED AT 20591000
PEQN  --  REAL ARRAY  --  DECLARED AT 20595000
PEQN  --  REAL ARRAY  --  DECLARED AT 20596800
PEQN  --  REAL ARRAY  --  DECLARED AT 20600010
       *20601900* 20604850
PEQN  --  REAL ARRAY  --  DECLARED AT 20701500
PERIO  --  DEFINE  --  DECLARED AT 20215000
        20372000  20374320  20448000  20449000  20461000  20461400  20461500  20461950  20467000  20471000  20472000
        20477000  20495000  20496000  20507000  20508000  20570270  20570370  20570470  20573470  20576700  20580000
        20581250  20585250  20585350  20585700  20585725  20585750  20590730  20604050  20604125  20605702  20781000
PERPER  --  LABEL  --  DECLARED AT 20320000  --  OCCURS AT 20372000
        20376000
PETUSERDISK  --  REAL PROCEDURE  --  DECLARED AT 05839400  --  FORWARD AT 00316100
       *05843600**05845500* 05954800  06420000  07045000  08569700  08714130  08716010  18425100  18425300  19576600
        19736000  20159100  20289150  28290600  28436000  37293270  41318240  41320500  41321200  41502100  41604400
        45092130
PEUIO  --  REAL ARRAY  --  DECLARED AT 00166000
       *04194600* 05842900  22011500 *22011600**44085100**44240900*
PF  --  STREAM VARIABLE  --  DECLARED AT 38422000
        38423000
PFACT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000  37344000 *37345000*
PFIRSTFID  --  REAL  --  DECLARED AT 12507500
        12590000 *12680500* 12723000
PFIRSTFID  --  REAL  --  DECLARED AT 12807500
PFIRSTFID  --  REAL  --  DECLARED AT 13011000
PG  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16751000
        16704000
PGA  --  LABEL  --  DECLARED AT 16699000  --  OCCURS AT 16756000
        16771000
PHYL  --  NAME  --  DECLARED AT 14624300
       *14712400* 14712510
PICKTHELOCK  --  PROCEDURE  --  DECLARED AT 19900000  --  FORWARD AT 18468100
        19685595
PINGO  --  REAL  --  DECLARED AT 00301000
PKT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06182100
        06180000  06181000  06328300
PKTCT  --  REAL  --  DECLARED AT 07269100
       *07290600* 07295020
PKTONLY  --  DEFINE  --  DECLARED AT 00416790
        20602515
PL  --  STREAM VARIABLE  --  DECLARED AT 15501500
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        15502500
PL  --  STREAM VARIABLE  --  DECLARED AT 20289390
        20289440
PL  --  REAL ARRAY  --  DECLARED AT 40005050
       *40027295* 40039000  40048000  40051000  40055000 *40056000**40060300* 40060302  40060305 *40060400* 40062000
       *40064000* 40065020 *40068000* 40068100  40070000  40078030  40078032  40078033  40078038  40078040  40078042
        40078048 *40078060*
PL  --  STREAM VARIABLE  --  DECLARED AT 44203000
        44204750
PLACEFINDER  --  REAL PROCEDURE  --  DECLARED AT 04700000  --  FORWARD AT 02187100
        02217100 *04742000* 04743000
PLUGGED  --  REAL  --  DECLARED AT 07006340
       *07117100**07123500* 07124500  07139511 *07140100*
PM  --  INTEGER ARRAY  --  DECLARED AT 06185105
       *06205030**06205040**06205050* 06206140 *06211100* 06211200  06328100
PN  --  STREAM VARIABLE  --  DECLARED AT 22191000
        22192100
PN  --  STREAM VARIABLE  --  DECLARED AT 37046192
        37046205  37046212
PN  --  STREAM VARIABLE  --  DECLARED AT 38626000
        38626300
PNCH  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07405100
PNCH  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08255000
        08257500  08259375  08272000  08273250  08276205
PNCH  --  STREAM VARIABLE  --  DECLARED AT 12657000
        12658000  12662000
PNCHDS  --  LABEL  --  DECLARED AT 12513000  --  OCCURS AT 12740000
        12705500
PNCHLK  --  LABEL  --  DECLARED AT 12513000  --  OCCURS AT 12708250
        12710250
PNTOG  --  DEFINE  --  DECLARED AT 37007100
        37046730  37046800  37046855
PO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08679000
        08690080
PO  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16749500
        16704000
POINTER  --  REAL  --  NAME PARAMETER  --  DECLARED AT 08700000
       *08705000* 08706000  08718000  08724000  08726000  08727000
POINTERS  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 07003610
        07003615  07003840
POOL  --  REAL  --  DECLARED AT 28003200
POOL  --  REAL  --  DECLARED AT 28401400
       *28458800* 28462000  28463200  28468600  28472600  28477200  28479800
POSSIBLE  --  LABEL  --  DECLARED AT 07423000  --  OCCURS AT 07431000
        07429000  20380500  20570270  20570370  20570470
POWIE  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20572200
        20567056  20567070  20567075  20567085  20567096  20567110  20567120  20567158  20567176  20567225  20567230
        20567240  20567260  20567270  20567274  20569835  20569940  20569950  20569970  20570080  20570090  20570120
        20570140  20570150  20570170  20570180  20570200  20570210  20570230  20570280  20570300  20570360  20570380
        20570410  20570460  20570480  20570530  20572900  20573410  20573420  20573440  20573510  20573520  20576800
PP  --  LABEL  --  DECLARED AT 37007000  --  OCCURS AT 37085000
        37008000
PP  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38794000
        38662000
PP  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
PPC  --  REAL PROCEDURE  --  DECLARED AT 20383000
       *20480000* 20600390  20604850  20605050
```

```
PPC -- STREAM VARIABLE -- DECLARED AT 20600390
       20600420
PPCPROCESS -- REAL -- DECLARED AT 20566100
PPCPROCESS -- REAL -- DECLARED AT 20581000
      *20581150*
PPCPROCESS -- REAL -- DECLARED AT 20584000
PPCPROCESS -- REAL -- DECLARED AT 20586800
PPCPROCESS -- REAL -- DECLARED AT 20589800
PPCPROCESS -- REAL -- DECLARED AT 20591000
PPCPROCESS -- REAL -- DECLARED AT 20595000
PPCPROCESS -- REAL -- DECLARED AT 20596800
PPCPROCESS -- REAL -- DECLARED AT 20600010
       20600390 *20602855**20604115**20604150* 20606860  20608076
PPCPROCESS -- REAL -- DECLARED AT 20701500
PR -- LABEL -- DECLARED AT 16055000 -- OCCURS AT 16249000
       16064000
PR -- LABEL -- DECLARED AT 18701000 -- OCCURS AT 18710900
       18701200
PR -- LABEL -- DECLARED AT 38661000 -- OCCURS AT 38798000
       38662000
PR -- LABEL -- DECLARED AT 41005000 -- OCCURS AT 41054000
       41006000
PRE -- LABEL -- DECLARED AT 28210800 -- OCCURS AT 28219200
       28213800
PREFINAL -- LABEL -- DECLARED AT 39055000 -- OCCURS AT 39145000
       39096000
PRESENT -- DEFINE -- DECLARED AT 14167000
       14238000
PREVLINK -- REAL -- DECLARED AT 20013000
       20021400  20021500  20022000  20022200 *20024800**20037100*
PREVLINK -- REAL -- DECLARED AT 20082200
       20089300  20089400  20089900  20090100
PREVLINK -- REAL -- DECLARED AT 20142600
PREVLOC -- INTEGER -- DECLARED AT 37388100
       37412000  37413000 *37414000*
PRI -- REAL -- VALUE PARAMETER -- DECLARED AT 01240000
       01240100
PRIMARYUSER -- DEFINE -- DECLARED AT 08100850
       08105500  08110050  08112150
PRINT -- DEFINE -- DECLARED AT 20245000
PRINTBACKUP -- PROCEDURE -- DECLARED AT 08282000
       16529000
PRINTDIGIT -- DEFINE -- DECLARED AT 12219500
       12313500  12315000  12316000  12317000
PRINTDIRECTORY -- PROCEDURE -- DECLARED AT 08098600
       08117200  16746500
PRINTER -- LABEL -- DECLARED AT 04357800 -- OCCURS AT 04390600
       04358400  04380600
PRINTER -- LABEL -- DECLARED AT 22064000 -- OCCURS AT 22202000
       22065000
PRINTER -- REAL SUBROUTINE -- DECLARED AT 37009000
       37012000  37013000  37046060  37046800
PRINTERFINISH -- PROCEDURE -- DECLARED AT 04035000
       46004000  46005000
PRINTITAGAIN -- LABEL -- DECLARED AT 12513000 -- OCCURS AT 12713000
       12723500
PRINTORPUNCHWAIT -- REAL PROCEDURE -- DECLARED AT 08255000 -- FORWARD AT 07405100
```

```
        07419300 *08277500* 08295200  08298000  12755500  22207000  38609300
PRINTTHECOVER  --  PROCEDURE  --  DECLARED AT 20289010
        20289600  20602530  20609435
PRIOR  --  DEFINE  --  DECLARED AT 20231000
        20507300  20507400
PRIORTNOX  --  DEFINE  --  DECLARED AT 12216500
        12250000  12273000
PRIORTNOX  --  DEFINE  --  DECLARED AT 12367000
        12422500  12463000
PRIORITY  --  INTEGER  --  DECLARED AT 07486000
        07488000 *07498000**07503000* 07503500  07504000
PRIORITY  --  STREAM VARIABLE  --  DECLARED AT 07488000
        07494000  07495000
PRIORITY  --  STREAM VARIABLE  --  DECLARED AT 07504000
        07506000
PRIORITY  --  REAL  --  DECLARED AT 08851000
        08916000 *08926000* 08936000  08937000
PRIORITY  --  STREAM VARIABLE  --  DECLARED AT 08916000
        08922000  08923000
PRIVATE  --  STREAM LABEL  --  DECLARED AT 08110700  --  OCCURS AT 08110800
PRN  --  STREAM VARIABLE  --  DECLARED AT 04681450
        04681500
PRNPBT  --  LABEL  --  DECLARED AT 08255700  --  OCCURS AT 08276580
        08273750  08276100
PRNPBTCODE  --  DEFINE  --  DECLARED AT 00134020
        02261100  08276200  16178000  20152200  20605460
PRNPBTSPECASE1  --  REAL PROCEDURE  --  DECLARED AT 12500000
        13045000  13070000  13095000  13112000  13136000
PRNPBTSPECASE2  --  PROCEDURE  --  DECLARED AT 12800000
        13053000  13063000  13083000  13099000  13115000
PRNT  --  STREAM LABEL  --  DECLARED AT 12658000  --  OCCURS AT 12658500
PRNTABLE  --  REAL ARRAY  --  DECLARED AT 00288000
        01253900  02434210  02434424  02664000  04369200  04674000 *04680200* 04681450 *04682000* 08033990  08051010
       *08051065* 08447100  12527500  15113200  16263350  18556500  19685350 *22117000**22145000**22145525* 28028600
        28031000 *28074050**28084250* 37027000  37046190  37048300  37122000  37205000  37240500  37243000  37284150
        37314100 *37319020* 37455000  38104300 *38116500* 38202300 *38238000* 38258500  38271500  38276000 *38638000*
        38788000  44167000
PRNTDS  --  LABEL  --  DECLARED AT 12513000  --  OCCURS AT 12728000
        12705500
PROB  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04683350
        04684250  04684450
PROC  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04182000
        04190000
PROCE  --  REAL  --  DECLARED AT 02057000
       *02101000* 02101100  02105000 *02107000*
PROCE  --  DEFINE  --  DECLARED AT 20229000
        20504000
PROCED  --  REAL  --  DECLARED AT 16911500
       *16926020* 16926022  16926500  16958000  16960500
PROCESSOPTIONLIST  --  SUBROUTINE  --  DECLARED AT 08102900
        08104300  08116650
PROCSWIT  --  LABEL  --  DECLARED AT 00009000  --  OCCURS AT 48087000
        48059000
PROCTIME  --  REAL ARRAY  --  DECLARED AT 00161000
       *02008300**02027000**02034000* 02368000 *06190000* 06193000 *06193500* 08533400 *08759000**08767000* 12419500
       *12610100**12612000* 12696000 *12697500**12817600**12819500* 12853000  18710900 *20172600**20180350* 22018000
        22023500 *22242100**22252000* 44158000 *44193000**45112000**48080200*
```

```
PROCVAL  --  REAL  --  DECLARED AT 20566100
       *20580305**20580310* 20580330
PROCVAL  --  REAL  --  DECLARED AT 20581000
PROCVAL  --  REAL  --  DECLARED AT 20584000
       20586600
PROCVAL  --  REAL  --  DECLARED AT 20586800
       20589600
PROCVAL  --  REAL  --  DECLARED AT 20589800
       20590750
PROCVAL  --  REAL  --  DECLARED AT 20591000
       20594750
PROCVAL  --  REAL  --  DECLARED AT 20595000
       20596650
PROCVAL  --  REAL  --  DECLARED AT 20596800
       20597459
PROCVAL  --  REAL  --  DECLARED AT 20600010
      *20602860*
PROCVAL  --  REAL  --  DECLARED AT 20701500
       20782000
PROG  --  REAL ARRAY  --  DECLARED AT 20566100
       *20566685* 20566690  20566695 *20566805**20566810**20566812**20566817* 20566820  20566830 *20566835* 20566840
        20567058  20567098  20567330  20567335 *20567340* 20567345  20567350 *20567360**20569240**20569525**20569528*
       *20569529**20569670**20569710**20569750**20569780**20569800**20569804**20569935**20569940**20569965**20569970*
        20569980 *20570040**20570050**20570140**20570160**20570200**20570220**20570560**20570570**20570577* 20572500
        20572800 *20576230**20576240*
PROG  --  REAL ARRAY  --  DECLARED AT 20581000
        20581350 *20581400* 20581450 *20581500**20581900* 20582000  20583250 *20583300* 20583350
PROG  --  REAL ARRAY  --  DECLARED AT 20584000
       *20586000**20586050**20586100**20586150**20586200**20586250**20586300**20586350**20586400**20586450**20586500*
PROG  --  REAL ARRAY  --  DECLARED AT 20586800
       *20587150*
PROG  --  REAL ARRAY  --  DECLARED AT 20589800
PROG  --  REAL ARRAY  --  DECLARED AT 20591000
PROG  --  REAL ARRAY  --  DECLARED AT 20595000
PROG  --  REAL ARRAY  --  DECLARED AT 20596800
PROG  --  REAL ARRAY  --  DECLARED AT 20600010
       *20601900* 20604850
PROG  --  REAL ARRAY  --  DECLARED AT 20701500
PROGRAMDESC  --  DEFINE  --  DECLARED AT 14160000
       14188000
PROGRAMRELEASE  --  PROCEDURE  --  DECLARED AT 04099000
       14048000  48105000
PROTECT  --  LABEL  --  DECLARED AT 20390000  --  OCCURS AT 20483100
       20396010
PROTY  --  INTEGER  --  DECLARED AT 17901500
       *17905500* 17919500
PRT  --  REAL ARRAY  --  DECLARED AT 00128000
        00131000  02207000  02208000  02216200  02222000  02261200 *02328100* 02328200  04103100  04104000  04105200
        04680100  04712000  06463520  07072000  07072100 *07072200* 07073500  07089000  07104500  08173200  08174000
        08709600  12528000  12539500  12545000 *12626250**12637500* 12649000 *12672000* 12675750  12705250  12710500
        12861500  12878000  12880500  12900000  12901000  13108000  14014100  14015000 *14035000**14045000**14060000*
        14072000  14187000  14356000  14358150  14358200  14358320  14358392  14358394  14358397  14358580  14358595
        14358597  14358615  14360300  14360330  14361200  14370030 *14370040**14370060* 14370100 *14370115* 14370140
       *14370160**14370190* 14644000  15085000  15422000 *15424000* 15426000 *16199000* 16851100  16851200  16853500
        16854700  18504000  18523800  18552800  18702200  18720300  18740400  18770100  18810200  18840200 *18860000*
        18860100  19525000  19525100  19685570  19900310  19900320 *19900330* 19900370  19900395  19900745  19900755
        19900760  19900780 *19900800* 19902000  19902150  19902190 *19902350**19903100* 19903200  19903900  19903910
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        *19904400* 20092300  20092600  20092700 *20092800**20093400* 20093700  22260000  22285000  22286020  22286030
         22300000  22301000  22356150  22357000  22363000  22365150  22366000  22374000  22376000  22377000  22410000
         22420000  22421000  22422000  22423100  28014600  28050200  28051000  28051200 *28051400* 28071400  28073200
         28248800  28249600  28250400  28293800  28305400  28434400  28451600  30908000  30910000  31005010  31005200
         31005300 *31005400* 37242100  37273000 *37280000* 38015950  38115000  38233000  38236000  38442200 *38495000*
         38710000  38806000  39083000  39297010  41040000  41314500  42485000  42486000  42488100 *42506000* 42517020
         42517100  42524200  42525000  42525500  42532000  42547100 *42547200* 42550600  42551090 *42551100**42551200*
         44156000  48019000  48024000  48032200  48032400  48032700  48032800  48032930  48032940 *48032950* 48043000
         48097200  48100000  48110000 *48141300**48141400**48141500**48141600* 48145000
PRT  --  INTEGER  --  DECLARED AT 08733000
         08737000 *08756000* 08758000  08759000  08760000  08766000  08767000  08768000  08774000 *08786000**08788000*
         08791000
PRT  --  STREAM VARIABLE  --  DECLARED AT 08737000
         08743000
PRT  --  STREAM VARIABLE  --  DECLARED AT 08791000
PRTADDR  --  REAL  --  DECLARED AT 06069400
         06087000  06090600  06090700  06090800  06091700  06092000  06096700  06101600  06108000  06109000  06110600
         06114600  06115700
PRTD  --  REAL ARRAY  --  DECLARED AT 31003000
        *31006100* 31007000  31008000  31013100  31014000 *31015000* 31017100  31017300  31017400  31019000  31020000
         31021000 *31022000*
PRTGAMES  --  REAL PROCEDURE  --  DECLARED AT 15400000
        *15439000* 16588000
PRTLOC  --  INTEGER  --  DECLARED AT 00026000
        *00031000* 00032000 *00034000* 00036000  00037000  00038000  00039045  00042000  00046000  00047000  00050000
         00051000  00055000
PRTMAX  --  REAL  --  DECLARED AT 04259600
PRTR  --  REAL ARRAY  --  DECLARED AT 14163000
        *14183000* 14184000 *14187000* 14190000  14192000  14197000  14210000 *14216000* 14217000  14218040  14218045
         14218065  14224000  14226000 *14247000* 14248000  14249000  14252000  14258000 *14260000* 14266000
PRTRLOC  --  REAL  --  DECLARED AT 19694000
        *19740000* 19753000
PRTROW  --  REAL ARRAY  --  DECLARED AT 00131000
         02184000 *02186000**02186050**02205000* 02275550  04252100  04626000  04678350 *06204000**06206000* 06354200
         06360515  06360540  06360550 *06360560* 06463300  06463340  07028000  07028100  12451000 *12452000* 12458500
         12473120 *12473140* 12545000  12649000  12699500  12705250  12710000  12710500  12861500  12878000  12880500
         12900000  12901000  13107000  13108000  14193000  14193100  14193200  14203100  14243000  14292150  14358325
         14431502 *14431506* 14582000  14583000  15113300 *15114600* 15114700  15115000  15115400  15422000 *16164000*
         16853100 *17906100* 17906250  17915000  17915500  18029000  18034000  18503300  18540200  18540300 *18570900*
         18580410  18730200  19799070  19900670  19903820  19903850  19903860 *20122100* 22042000  22303200  28022200
         28036200  28041600  28043000  28043200  28046400  28046600  28061800  28085800  28086200  28089600  28089800
         28095600  28096800  28097200  28216800  28225200  28230400  28230600  28232800  28242000  28242200  28258700
         28260800  28270822  28270824  28285400  28293800  28295800  28303200  28303400  28303600  28307730  28467400
         28472800  28476200  28848000  28849000  28852100  28852200  28863000  28882000  28885500  31006100  36007000
         36008000  37046800  37046810  37047250  37048100  37121000  37172000  37181000  38014700  38106000  38204000
         38573000  39009050  42526000 *45153000* 48027000  48030000  48031000  48031100  48032920
PRTS  --  REAL  --  DECLARED AT 19694000
        *19720000* 19721000  19740000  19741000
PRTSZ  --  REAL  --  DECLARED AT 19694000
        *19742000* 19754000
PRTVALUE  --  REAL  --  DECLARED AT 06069400
         06115700
PRYOR  --  REAL ARRAY  --  DECLARED AT 00021600
         00039055  00050000  01260455  01261170 *02006000* 02007300  02107000  02173085  02176000  02196000 *02205100*
         02258000  02275700  02434480  04045200  04249000  04377400  04378000  04557200  04558000  04567000  04568366
         04655700  04671400  04671550  04672100  05703500  05842300  05849300  05960700  06022600  06066000  06090700
         06098600  06099100  06103500  06103700  06203700  06215000  06257000  06360540  06361705  06415000  06463300
```

```
          06464900  07001640  07059200  07059500  07139500  07146000  07149000  07171000  07177000  07232000  07272500
          07301000  07371300  07392000  07414000  07426000  07427630  07501000 *07503000* 07562000  08046000  08088000
          08268000  08378000  08386000  08421000  08569300  08571000  08580000  08627000  08670000  08689200  08830000
          08866000  08880000  08915000  08933000  08935000  08940000  08943000  08946000  09617000  09630000  09635000
          09637000  09680000  12386000  12399000  12415000  12422500  12530500  12710000  12861500  13051000  14186120
          14193100  14198200  14205000  14206100  14237000  14279550  14292110  14292150  14351320 *14351500* 14358386
          14358450  14358588  14360400  14361000  14378100  14383000  14384000  14390000  14393000  14398800  14399400
          14541130  14560000  14582000  14588100  15114700  17001400  17905500 *17906000* 17906250  17915000 *17919500*
          18029000  18032000  18032010  18033000  18273000  18425400  18523400  18540200  18559500  18580410  18730300
          18780100  18840900  18841400  18844000  19303000  19685380  19685460  19743000  19768050  19768800  19799070
          19900400  19900670  19902130  19902850  19903650  19903907  20034900  20039900  20091900  20119600  20150800
          20154000 *20179100**20198500* 20407000  20582440  20588600  20601640  22009000  22049000  22905000  24043000
          24045100  28080400  28085800  28096800  28242000  28293800  28440800  28848000  28852100  32000800  36007000
          37046800  37189500  37227000  37241400  37304000  37324000  37394150  38092000  38250500  38285500  38372000
          38555000  38574000  38668000  40311000  40317220  41311100  41317300  41320310  41328200  42476000  42501650
          44157100 *44187200* 45135230  48015400  48042000 *48079100*
PRYR  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00021000
          00020000
PS    --  STREAM LABEL  --  DECLARED AT 04362200  --  OCCURS AT 04362600
PS    --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08916000
          08883000
PS    --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20289020
          20289010  20289020 *20289152* 20289153  20289154  20289155  20289160
PS    --  STREAM VARIABLE  --  DECLARED AT 20289160
          20289185
PSD   --  REAL  --  DECLARED AT 02133150
         *02173087* 02173210  02173286  02173350  02173364
PSEUDO  --  REAL ARRAY  --  DECLARED AT 02113080
          02173075  02173085  02173087 *02173090* 02173095 *02173265* 02173360 *02173364**02173366**02173370**02173375*
         *02347250**02347260* 02347280  02347340  07372320  07417100  07417700 *07419700* 07478100  18710246  18710258
         *18710260* 18710274 *19774750**20289540* 20602520 *20608116**20608140**20608790* 20608850  20609430  20609570
         *20609670* 37046400 *37046430* 38608910 *38806200* 39092165  44164600
PSEUDOCOPY  --  INTEGER  --  DECLARED AT 02347110
         *02347437* 07427600  07427630 *07449500**18438195**20610550**22212450**38732000**44186005*
PSEUDOMAX  --  DEFINE  --  DECLARED AT 00007050
          07372090  07428000  07462400  44201110
PSEUDOMAXT  --  DEFINE  --  DECLARED AT 00007060
          06463380  07477000  08483000  08487100  08495000  08548000  08555000  08562000  08564000  16082000  16085000
          44151094  44174000  44194000
PSEUDOMAX1  --  DEFINE  --  DECLARED AT 00007055
          07462200  44151092  44151620  44164500  44178100
PSEUDOMIX  --  REAL ARRAY  --  DECLARED AT 02113085
          02133350  04352200  04376600  04383400  04386800  04393000  04404800  04416400  04567600  04567830  04568590
          04648000  04672700  04673150  04674850  04675250  04683800  04686350  04687050  06205010 *06205020* 07511000
          08544700  08784000  08798500  12473280  14431600  14541090  14541110  14541120  15114300  15115900  15437100
          16713500  16956020  16956090  18522500  18523300  18710244  18710254  18710272  19768764  19774100 *20170800*
         *20176120* 20566785  20585610  20602470  20602480  20605510  20608114  20609660  28439400  28440600  32001500
          37046370  37187250  38045150  38608900  39092165  41333090  44160400
PSF   --  DEFINE  --  DECLARED AT 02110050
          02186050  02205000  06204000  07028000  12452000  12473120  12473140  13107000  14431502  14431506  15114600
          15114700  16164000  17906100  18570900  22042000  22303200  28043200  28046600  28089800  28230600  28260800
          28270822  28303400  28885500  45153000  48027000  48031000
PSOURCE  --  DEFINE  --  DECLARED AT 20600000
          20602530  20609435  20609436
PSW   --  REAL  --  DECLARED AT 02133150
         *02173095* 02173210  02173220  02173280  02173350  02173362  02173370
PS1   --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08927000
```

```
        08928000
PS2  --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08936000
        08932000
PTIME  --  REAL  --  DECLARED AT 12357500
       *12419500**12420000* 12421000  12423500
PTN  --  REAL  --  DECLARED AT 01250300
       *01253900* 01254000 *01260425**01260460* 01260465 *01261150**01261180* 01261200
PTN  --  STREAM VARIABLE  --  DECLARED AT 01254000
        01254100
PTN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000
PTPUNCH  --  REAL SUBROUTINE  --  DECLARED AT 37014000
        37017000  37018000  37085000
PTR  --  REAL  --  DECLARED AT 04554600
        04555150 *04555500**04555600**04555650**04570100* 04651050  04651200 *04654900* 04655800  04657400  04658400
        04659400  04662700 *04662800*
PTYPE  --  REAL  --  DECLARED AT 07006180
       *07039100**07039200**07039410* 07039500 *07039600* 07040000  07115100  07118550  07120010 *07126000**07126500*
        07127000  07129100  07129200  07139510  07139520 *07169100**07169110* 07169500
PU  --  STREAM VARIABLE  --  DECLARED AT 02641000
        02653000
PU  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06380750
        06381000
PUBLIC  --  STREAM LABEL  --  DECLARED AT 08110650  --  OCCURS AT 08111100
PUD  --  REAL  --  DECLARED AT 08255500
        08256450 *08256500* 08259225  08268500
PUD  --  LABEL  --  DECLARED AT 38548000  --  OCCURS AT 38644500
        38608200  38610100
PUNCH  --  LABEL  --  DECLARED AT 04357800  --  OCCURS AT 04403800
        04358400  04380800
PUNCH  --  DEFINE  --  DECLARED AT 20244000
PUNCH  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22213500
        22065000
PUNCH  --  REAL SUBROUTINE  --  DECLARED AT 37019100
        37019300  37019400  37046075  37046800
PUNCHLCK  --  DEFINE  --  DECLARED AT 00416770
        12707750  12878000  38737000
PUNT  --  PROCEDURE  --  DECLARED AT 00650000
        02005000  02017000  02181000  02215500  04004170  04252000  06009300  06037300  06380350  14603750  16852900
        18013000  24007100  24042675  40278150  48140000
PUNTER  --  REAL ARRAY  --  DECLARED AT 00643000
        00651000  00652000  00656600  00657000  16852900  44179100  44181000
PUNTSIZE  --  DEFINE  --  DECLARED AT 00643100
        44151080  44179100
PURGE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02381000
        02380000  02381000  02387000
PURGE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02637000
        02635000  02636000  02641000
PURGE  --  DEFINE  --  DECLARED AT 38385000
        38510000
PURGE  --  DEFINE  --  DECLARED AT 38567000
PURGE  --  DEFINE  --  DECLARED AT 38678000
        38787000
PURGE  --  DEFINE  --  DECLARED AT 41022000
        41190700
PURGEIT  --  PROCEDURE  --  DECLARED AT 37449000  --  FORWARD AT 00397000
        12528500  37466000  38789000
```

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PURGELOcK  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14671000
        14632900
PUT  --  DEFINF  --  DECLARED AT 00301100
PUTINFILENAME  --  SUBROUTINF  --  DECLARED AT 08106200
        08106850  08115350
PX  --  LABEL  --  DECLARED AT 38660000  --  OCCURS AT 38778000
        38796000  38800000
PX  --  LABEL  --  DECLARED AT 41004000
P1  --  INTEGER  --  DECLARED AT 08733000
       *08788000* 08791000
P1  --  STREAM VARIABLE  --  DECLARED AT 08791000
P1  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28085600
        28010200  28077600  28078200  28078800
P1MIX  --  REAL  --  DECLARED AT 00021700
        00039055  00050000  01260455  01261170  02006000  02008100  02008300 *02026000* 02107000  02133350  02173085
        02174000  02176000  02196000  02202100  02202200  02202500  02203000  02205000  02205100  02206100  02207000
        02208000  02216200  02221000  02222000  02258000  02259000  02260000  02261000  02261100  02261200  02275550
        02275700  02318000  02322000  02327000  02328100  02434480  02434490  02434530  02665100  04045100  04045200
        04050000  04061000  04103100  04104000  04105200  04105550  04105600  04105650  04236000  04237000  04249000
        04252000  04252100  04252300  04252500 *04316000**04317200* 04377400  04378000  04557200  04558000  04567000
        04568366  04655700  04671400  04671550  04672100 *04678100**04687600* 04710000  04711000  04712000  04722000
        04723000  04726000  04727000  05703500  05842300  05846395  05849300  05853600  05960700  05970500  05975610
        06022600  06066000  06090700  06098600  06099100  06103500  06103700  06116000  06116100  06190000 *06190100*
        06203700  06215000  06257000  06353500 *06353590**06353660* 06354000  06354200  06355000  06360515  06360516
        06360520  06360540  06360550  06360560  06361705  06415000  06463260  06463280  06463300  06463340  06463380
        06463520  06463760  06463992  06464900  06465810  06465820  06465840  07001640  07001840  07028000  07028100
        07059200  07059500  07072000  07072100  07072200  07073500  07074090  07075000  07089000  07104500  07139500
        07146000  07149000  07171000  07177000  07232000  07272500  07296000  07301000  07352000  07371300  07371600
        07371950  07392000  07414000  07426000  07427625  07427630  07455000  07562000  07568000  07572000  08046000
        08088000  08173200  08174000  08259575  08268000  08270650  08378000  08379000  08386000  08388000  08421000
        08533500  08569300  08571000  08571100  08571600  08580000  08602000  08627000  08628000  08670000  08677000
        08689200  08689300  08696100  08709600  08728600  08830000  08836000  08866000  08880000  08915000  08933000
        08935000  08940000  08943000  08946000  08997000  09617000  09624000  09630000  09635000  09637000  09638000
        09647000  09680000  09680100  09682620  12386000  12419600  12528000  12530500  12538500  12539500  12545000
        12610100 *12610500**12611500* 12612000  12626250  12637500  12649000  12672000  12675000  12675750  12688000
        12696000  12696500  12697500  12698500  12699500  12705250  12708250  12709750  12710000  12710500  12817600
       *12818000**12819000* 12819500  12823000  12829500  12833000  12853000  12853500  12854000  12861500  12863000
        12863500  12878000  12880500  12899500  12900000  12901000  13051000  13107000  13108000  14014100  14015000
        14015210  14035000  14045000  14060000  14072000  14186100  14186120  14187000  14193000  14193100  14193200
        14198200  14201000  14203000  14203100  14204100  14205000  14206100  14227400  14233000  14233100  14237000
        14243000  14279250  14279550  14292100  14292110  14292150  14351320  14351500  14356000  14358000  14358150
        14358200  14358320  14358325  14358360  14358386  14358392  14358394  14358397  14358450  14358580  14358588
        14358595  14358597  14358615  14360300  14360330  14360400  14360600  14360700  14361000  14361200  14364200
        14367100  14370100  14370150  14370180  14370190  14378100  14379000  14383000  14384000  14390000  14393000
        14396000  14398800  14399400  14411000  14411200  14411840  14534500  14541000  14541090  14541110  14541120
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        17917500  17919000  17919500  17922000  17922500  17926000  17926500  18023000  18024000  18028000  18029000
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        18504000  18510100  18520900  18522300  18522500  18522700  18523300  18523400  18523800  18524900  18526300
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        18559500  18570000  18570900  18580410  18702200  18710244  18710254  18710272  18710300  18710400  18710600
        18710900  18711100  18711790  18720300  18730200  18730300  18740400  18740600  18740700  18740800  18770100
        18780100  18790600  18791620  18810200  18822100  18835200  18840200  18840900  18841400  18841500  18843700
        18844000  18844100  18845500  18860000  18860100  19303000  19525000  19525100  19525200  19680400  19685015
        19685380  19685460  19685570  19685580  19685585  19697400  19699000  19743000  19768050  19768200  19768764
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19900395  19900400  19900440  19900550  19900670  19900680  19902000  19902130  19902150  19902190  19902350
19902850  19903100  19903200  19903650  19903907  20034900  20035000  20119600  20119700  20120600 *20149800*
20150800  20150900 *20152000*  20154000 *20180000*  20180350 *20210200*  20210300  20407000  20582440  20582450
20583650  20588600  20601640  20760000  20769200  20771020  22009000  22010000  22030000  22049000  22429220
22429230  22905000  22906000  22911000  22913000  22917000  22920000  24037900  24038000  24042700  24043000
24043100  24043800  24044250  24045100  24045250  24045500  24210000  28014600  28016200  28022200  28030800
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28294200  28294400  28295800  28303200  28303400  28303600  28305400  28307730  28416400  28416600  28434400
28435200  28439400  28439600  28440000  28440600  28440800  28451600  28467400  28472800  28476200  28848000
28849000  28852100  28852200  28863000  28882000  28885500  30908000  30910000  30920000  31005010  31005100
31005200  31005300  31005400  31006100  36006500  36007000  36008000  36009000  37026000  37036400  37046370
37046735  37046740  37046800  37046810  37046829  37046830  37046835  37046855  37046860  37046900  37046920
37047250  37047670  37048100  37059000  37121000  37172000  37181000  37185350  37187250  37189500  37195250
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37394700  37428100  38013010  38013040  38014700  38015950  38039000  38045150  38077000  38079000  38092000
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42550500  42550600  42551000  42551090  42551100  42551200 *45113000** 45123000** 45130100*  45135230  45153000
48017000  48019000  48024000  48027000  48030000  48031000  48031100  48032150  48032200  48032400  48032700
48032800  48032920  48032930  48032940  48032950  48037000  48042000  48043000 *48045000** 48064000** 48067000*
*48071000*  48079100  48080200  48096000  48100000  48110000  48121200 *48122000*  48135000  48138000  48141200
48141300  48141400  48141500  48141600  48142500  48145000
P1MIX  -- INTEGER -- VALUE PARAMETER -- DECLARED AT 00367000
00365000  00366000
P1MIX  -- STREAM VARIABLE -- DECLARED AT 02222000
02244000
P1MIX  -- STREAM VARIABLE -- DECLARED AT 06355000
06359000
P1MIX  -- STREAM VARIABLE -- DECLARED AT 12708250
12708750
P1MIX  -- STREAM VARIABLE -- DECLARED AT 12823000
P1MIX  -- STREAM VARIABLE -- DECLARED AT 14204100
14204200
P1MIX  -- STREAM VARIABLE -- DECLARED AT 15021000
*15030000* 15030500
P1MIX  -- STREAM VARIABLE -- DECLARED AT 17907000
17912500
P1MIX  -- STREAM VARIABLE -- DECLARED AT 18528200
18528600
P1MIX  -- STREAM VARIABLE -- DECLARED AT 18570000
18570600
P1MIX  -- STREAM VARIABLE -- DECLARED AT 18790600
18790700
P1MIX  -- STREAM VARIABLE -- DECLARED AT 18791620
18791640
P1MIX  -- STREAM VARIABLE -- DECLARED AT 24042700
24042725
```

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P1MIX  --  STREAM VARIABLE  --  DECLARED AT 28291200
        28292000
P1MIX  --  STREAM VARIABLE  --  DECLARED AT 30920000
        30924000
P1MIX  --  STREAM VARIABLE  --  DECLARED AT 37361000
        37379000
P1PROCESS  --  LABEL  --  DECLARED AT 02023000  --  OCCURS AT 48099000
        46027000  46028000  46029000  46030000  46031000  46032000  46033000  46034000  46035000  46036000  46037000
        46038000  46039000
P2  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28086600
        28010200
P2BUSY  --  LABEL  --  DECLARED AT 00008000  --  OCCURS AT 48121000
        46010000
P2FAKE  --  LABEL  --  DECLARED AT 00009000  --  OCCURS AT 48085000
        48015500
P2MIX  --  REAL  --  DECLARED AT 00021700
        02038000  02041000  02042000 *02043000* 02364000  08533500  12419600  16850700  19905310  22242100  22252000
        22299000  22361000  22409000  48001000  48015100  48015400  48019500  48033000 *48037000* 48096000  48097200
        48122000 *48123000*
P2PROCESS  --  LABEL  --  DECLARED AT 02023000  --  OCCURS AT 48095000
        46014000  46015000  46016000  46017000  46018000  46019000  46020000  46021000  46022000  46023000  46024000
        46025000  46026000
P3  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28088800
        28080600
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00336100
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379400
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00379700
        00379600
Q  --  STREAM VARIABLE  --  DECLARED AT 00651800
        00652600  02161000
Q  --  STREAM VARIABLE  --  DECLARED AT 02223000  --  OCCURS AT 02158000
        02225000  02251050  02251060  02251100  02251110
Q  --  STREAM VARIABLE  --  DECLARED AT 02347350
        02347360 *02347370*
Q  --  INTEGER  --  DECLARED AT 05847700
        *05850600**05851300**05851700* 05851800  05851900 *05852000* 05852100
Q  --  INTEGER  --  DECLARED AT 05952000
        *05962600* 05973800  05974200 *05974400**05974800* 05975000
Q  --  REAL  --  DECLARED AT 06185000
        *06208000* 06217000  06218000  06224000  06233100  06235100  06248000  06279100
Q  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 06350300
        06350000  06350300  06351000  06352000 *06380250* 06380300  06380400  06380600  06380650  06381250 *06381300*
        06381320 *06381335* 06381340 *06381395* 06381400
Q  --  STREAM VARIABLE  --  DECLARED AT 06381340
        06381350  06381360
Q  --  REAL  --  DECLARED AT 07006070
        *07013000* 07014000  07030000 *07057000**07059000**07059300* 07059400  07059500 *07061000**07066900* 07119100
        07125500  07141000
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07405100
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08255000
        08256440  08257000  08258400  08259225  08259810  08260500 *08270200*
Q  --  REAL  --  DECLARED AT 08441000
        *08494000* 08496000  08502000
Q  --  STREAM VARIABLE  --  DECLARED AT 08502000
        08504000
Q  --  INTEGER  --  DECLARED AT 14350100
        *14360330* 14360340 *14360350* 14360360  14360370 *14415000**14431530* 14431600
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Q  --  STREAM VARIABLE  --  DECLARED AT 14415000
Q  --  STREAM VARIABLE  --  DECLARED AT 14645400
        14650000
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15600000
        15602500  15602680  15603900  15604600
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15610000
        15615000
Q  --  STREAM VARIABLE  --  DECLARED AT 15615000
        15616000 *15618000*
Q  --  SWITCH LABEL  --  DECLARED AT 18211000
        18273060  18289000  18306000
Q  --  STREAM VARIABLE  --  DECLARED AT 18521000
        *18521200* 18522100
Q  --  REAL  --  DECLARED AT 19900260
        *19900370* 19900380  19900390
Q  --  STREAM VARIABLE  --  DECLARED AT 20031500
        20032250
Q  --  STREAM VARIABLE  --  DECLARED AT 20043800
Q  --  STREAM VARIABLE  --  DECLARED AT 20106000
Q  --  STREAM VARIABLE  --  DECLARED AT 20181000
Q  --  STREAM VARIABLE  --  DECLARED AT 20299030
        20299040
Q  --  STREAM VARIABLE  --  DECLARED AT 20511660
        20511690
Q  --  STREAM VARIABLE  --  DECLARED AT 20592400
        20592450
Q  --  REAL  --  DECLARED AT 28003400
Q  --  REAL  --  DECLARED AT 28203800
        28237400 *28240200*
Q  --  REAL  --  DECLARED AT 28803000
        28831000 *28836500*
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32000100
        32000000  32001500  32002300
Q  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 32100000
        32100350  32100600
Q  --  REAL  --  DECLARED AT 36003000
        *36007000* 36008000
Q  --  REAL  --  DECLARED AT 37422000
        *37425500* 37428100
Q  --  STREAM VARIABLE  --  DECLARED AT 38807000
        *38808000*
Q  --  STREAM VARIABLE  --  DECLARED AT 40255000
        40256000
QM  --  STREAM VARIABLE  --  DECLARED AT 04647100
        04647150
QMARKTABLEADDRESS  --  STREAM VARIABLE  --  DECLARED AT 07003462
        07003484
QMK  --  STREAM VARIABLE  --  DECLARED AT 07066100
        07066500 *07066800*
QT  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16173000
        16062000  16206200
QTED  --  DEFINE  --  DECLARED AT 12516000
        12528000  12649000  12705250  12710500
QTED  --  DEFINE  --  DECLARED AT 12815000
        12861500  12878000  12880500  12900000  12901000
QTFD  --  DEFINE  --  DECLARED AT 13021000
QTRDY  --  DEFINE  --  DECLARED AT 00081200
```

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QTRDYMASK  --  DEFINE  --  DECLARED AT 00081200
QTSPEC  --  LABEL  --  DECLARED AT 12514000  --  OCCURS AT 12626000
        12515000
QTSPEC  --  DEFINE  --  DECLARED AT 13024000
        13112000
QUEST  --  DEFINE  --  DECLARED AT 20217000
        20324000  20364000  20378000  20585705  20585710  20602650  20604200  20605880  20608072  20608250  20608730
QUFUFUP  --  PROCEDURE  --  DECLARED AT 04016000
        04029000  04052000  04191000
QUIT  --  LABEL  --  DECLARED AT 04261200  --  OCCURS AT 04305200
        04318600  04319800  04333800  04335400  04336800  04337600
QUIT  --  LABEL  --  DECLARED AT 08255800  --  OCCURS AT 08280000
        08259625  08259650  08260000
QUIT  --  LABEL  --  DECLARED AT 13019000  --  OCCURS AT 13132000
        13116000
QUIT  --  LABEL  --  DECLARED AT 20146600  --  OCCURS AT 20210000
        20146900
QUIT  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20571500
        20570280  20570380  20570490
QUIT  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28465000
        28460400
QUITTING  --  DEFINE  --  DECLARED AT 20019000
        20025800  20036300  20037900  20047400
QUITTING  --  DEFINE  --  DECLARED AT 20087900
QUITTING  --  DEFINE  --  DECLARED AT 20148100
QUP  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04190000
QZ  --  LABEL  --  DECLARED AT 02193000  --  OCCURS AT 02269000
        02287255  02287270  02309000
R  --  REAL  --  NAME PARAMETER  --  DECLARED AT 00336100
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
        00452600  00452700
R  --  INTEGER  --  DECLARED AT 02133200
        *02133300**02133350* 02133380 *02173220* 02173230  02173240  02173292  02173294  02173301
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02177100
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02393500
        02393400
R  --  STREAM VARIABLE  --  DECLARED AT 02662100
R  --  REAL  --  DECLARED AT 04021000
R  --  REAL  --  DECLARED AT 04044000
        04059000
R  --  REAL ARRAY  --  DECLARED AT 04101000
        04106000
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121410
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121425
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04122000
        04129570  04129580 *04129590* 04130000  04134060  04134500  04134700  04146100  04150200 *04151200* 04151230
        04207000  04224100  04225000  04228000
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04255000
        04254000  04255000
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04256000
        04272000  04281800  04284200 *04286200* 04287000  04299600  04300000  04304800  04310400
R  --  STREAM VARIABLE  --  DECLARED AT 04272000
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04353200
        04368200  04371920  04372000 *04372100**04397400* 04407000  04408600  04412800  04413200  04413600 *04414000*
        04414200  04414600  04415600 *04417400* 04418200  04418800  04419400  04421600  04429400
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04550000
        04548000  04549000  04557000  04571000  04579100  04608000  04633200 *04633300**04637000* 04639100 *04648250*
```

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          04651300
R  --   STREAM VARIABLE  --  DECLARED AT 04680350
          04680450
R  --   INTEGER  --  DECLARED AT 05841615
        *05844110**05844930* 05846360  05846390
R  --   INTEGER  --  DECLARED AT 05847700
        *05850120* 05853425  05853595
R  --   INTEGER  --  DECLARED AT 05951800
          05952250 *05960650* 05960670 *05961400* 05966100  05966400 *05966600* 05967200  05975600  05975620
R  --   REAL  --  DECLARED AT 06068300
        *06109400* 06110300  06114300  06114400
R  --   REAL  --  NAME PARAMETER  --  DECLARED AT 06350300
          06350000  06351000  06353500  06381395
R  --   REAL  --  DECLARED AT 07006060
          07043000  07047000 *07143000**07164000**07174000* 07178100  07178200  07178300
R  --   DEFINE  --  DECLARED AT 07387000
          07390000  07393000  07399000  07400400
R  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 07406000
          07409000  07409100  07409200  07409250  07409300  07415100  07417100  07417400  07417700  07419700  07419800
R  --   REAL  --  DECLARED AT 07424000
        *07428000* 07429000  07432100  07433000  07437300  07448000  07449200  07453000
R  --   REAL  --  DECLARED AT 07542000
R  --   REAL  --  DECLARED AT 08027000
        *08030000* 08030100 *08043000* 08049000
R  --   REAL ARRAY  --  DECLARED AT 08173100
          08175500
R  --   STREAM VARIABLE  --  DECLARED AT 08320000
R  --   REAL  --  DECLARED AT 08392000
        *08410000* 08410100  08412100  08412200  08412400
R  --   STREAM VARIABLE  --  DECLARED AT 08472000
R  --   STREAM VARIABLE  --  DECLARED AT 08532000
          08533000  08619000
R  --   STREAM VARIABLE  --  DECLARED AT 08632000  --  OCCURS AT 08616000
          08655000
R  --   REAL  --  DECLARED AT 14545000
          14556000 *14559250* 14563000  14592000  14598100  14600500  14602000  14603400  14609000  14621000
R  --   STREAM VARIABLE  --  DECLARED AT 15426000
          15431000
R  --   STREAM VARIABLE  --  DECLARED AT 15438060
          15438090
R  --   REAL  --  DECLARED AT 16696200
          16696300 *16827100* 16827900  16829550 *16852000**16852700* 16852800 *16852900* 16853000  16853100 *16853300*
          16854200  16854400
R  --   REAL ARRAY  --  DECLARED AT 19692000
        *19719000* 19720000 *19727000* 19754000  19766800
R  --   REAL  --  DECLARED AT 19900260
        *19900380* 19900390 *19900750* 19900755  19900760  19900770 *19900780* 19900800
R  --   STREAM VARIABLE  --  DECLARED AT 20590660
          20590665
R  --   STREAM VARIABLE  --  DECLARED AT 20590680
          20590685
R  --   STREAM VARIABLE  --  DECLARED AT 20590700
          20590705
R  --   STREAM VARIABLE  --  DECLARED AT 32000800
          32000850
R  --   STREAM VARIABLE  --  DECLARED AT 37256000
R  --   STREAM VARIABLE  --  DECLARED AT 37284120
```

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        37284140
R  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
        37357300  37357400
R  --  REAL  --  DECLARED AT 38362000
       *38399000* 38400000  38402000  38404000  38408000  38456000  38464000
R  --  REAL  --  DECLARED AT 38547000
       *38581920**38598000* 38598100  38599000  38600000 *38607200* 38608100  38608400  38609300  38610100  38610200
        38637000
R  --  REAL  --  DECLARED AT 38655000
R  --  REAL  --  DECLARED AT 40004000
       *40016500**40046000* 40047000  40049000  40051000  40055000  40056000 *40258000* 40261042 *40321130**40321135*
        40322440  40322442  40322470 *40322600**40322800* 40324102  40324300 *40325000**40327000**40330000**40333000*
        40334055
R  --  REAL  --  DECLARED AT 41003000
       *41050000* 41190900
R  --  STREAM VARIABLE  --  DECLARED AT 41333005
R  --  REAL  --  DECLARED AT 42516000
       *42517020* 42517030
R  --  STREAM VARIABLE  --  DECLARED AT 42517030
        42517040
RA  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16850300
        16705000
RA  --  REAL  --  DECLARED AT 40004000
       *40039000* 40039200  40055000  40056000  40060060  40060100  40060300  40065080  40065100 *40321300**40321810*
       *40322220*
RADD  --  INTEGER  --  DECLARED AT 40004000
        40016026 *40017285* 40027270  40027290  40039000  40039100  40039200  40040500  40047000  40047100  40055000
        40056000  40060060  40060100 *40064000* 40065020 *40065040* 40065080  40065100 *40078068* 40078074 *40078076*
        40100200  40100500  40100600 *40100700**40100900**40101250**40254100* 40255000 *40261046**40287000* 40290000
       *40290200**40290300* 40290400 *40290600**40321135**40321300* 40324210 *40334055* 20380100  20567120
RB4  --  DEFINE  --  DECLARED AT 28407200
        28463800  28464400
RB5  --  DEFINE  --  DECLARED AT 28407000
        28461800  28462200
RC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04255200
        04255100  04255200
RC  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04667050
        04667000  04667050  04674600  04675600  04677400  04679050  04682950  04685050  04685650  04685750  04686450
RC  --  STREAM VARIABLE  --  DECLARED AT 04679050
RC  --  LABEL  --  DECLARED AT 16056000  --  OCCURS AT 16263000
        16065000
RC  --  STREAM VARIABLE  --  DECLARED AT 38762000
RCW  --  REAL  --  DECLARED AT 00029000
        00031000
RCW  --  REAL  --  DECLARED AT 02115000
RCW  --  REAL  --  DECLARED AT 05950400
        05950600
RCW  --  REAL  --  DECLARED AT 06068300
RCW  --  REAL  --  DECLARED AT 06407000
RCW  --  REAL  --  DECLARED AT 08173000
RCW  --  REAL  --  DECLARED AT 08568100
        08568150
RCW  --  REAL  --  DECLARED AT 12501500
       *12665500*
RCW  --  REAL  --  DECLARED AT 12801500
RCW  --  REAL  --  DECLARED AT 13002000
RCW  --  REAL  --  DECLARED AT 14345000
```

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        14353000
RCW  --  REAL  --  DECLARED AT 15111800
RCW  --  REAL  --  DECLARED AT 16691500
        16692000
RCW  --  REAL  --  DECLARED AT 16907000
        16907500
RCW  --  REAL  --  DECLARED AT 18502300
        18520800  18552600
RCW  --  REAL  --  DECLARED AT 19519000
RCW  --  REAL  --  DECLARED AT 20011800
RCW  --  REAL  --  DECLARED AT 20081000
RCW  --  REAL  --  DECLARED AT 20141400
      *20149200*
RCW  --  REAL  --  DECLARED AT 20566100
        20567520 *20567530*
RCW  --  REAL  --  DECLARED AT 20581000
        20581125 *20581130*
RCW  --  REAL  --  DECLARED AT 20584000
        20584325 *20584330*
RCW  --  REAL  --  DECLARED AT 20586800
        20587110 *20587120*
RCW  --  REAL  --  DECLARED AT 20589800
        20590010 *20590020*
RCW  --  REAL  --  DECLARED AT 20591000
        20591610 *20591620*
RCW  --  REAL  --  DECLARED AT 20595000
        20595080 *20595090*
RCW  --  REAL  --  DECLARED AT 20596800
        20596945 *20596947* 20597460
RCW  --  REAL  --  DECLARED AT 20600010
      *20600760*
RCW  --  REAL  --  DECLARED AT 20701500
        20707000 *20708000*
RCW  --  REAL  --  DECLARED AT 22002000
RCW  --  REAL  --  DECLARED AT 22067000
RCW  --  REAL  --  DECLARED AT 28000500
        28000600 *28049400*
RCW  --  REAL  --  DECLARED AT 28200800
        28201000 *28246000*
RCW  --  REAL  --  DECLARED AT 37451000
RCW  --  REAL  --  DECLARED AT 38001000
        38047000 *38048000* 38100000
RCW  --  REAL  --  DECLARED AT 38102100
        38110000 *38110500* 38192000
RCW  --  REAL  --  DECLARED AT 38200100
        38210000 *38210500* 38298500
RCW  --  REAL  --  DECLARED AT 38356000
      *38387000* 38538000
RCW  --  REAL  --  DECLARED AT 38541000
        38580000 *38581000* 38646000
RCW  --  REAL  --  DECLARED AT 38649000
        38695000 *38696000* 38819000
RCW  --  REAL  --  DECLARED AT 39001000
      *39307400*
RCW  --  REAL  --  DECLARED AT 41003100
      *41309000*
RCW  --  REAL  --  DECLARED AT 41316200
```

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RCW  --  REAL  --  DECLARED AT 41327200
RCW  --  REAL  --  DECLARED AT 42515000
       *42525000* 42525100  42525130  42525150  42525500  42526000  42527000
RCW  --  REAL  --  DECLARED AT 45001000
       *45075590* 45248000
RCWL  --  REAL  --  DECLARED AT 42515000
       *42525000* 42525150  42527000
RD  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12545000
       12547500
RD  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16538000
       16365000
RDATA  --  LABEL  --  DECLARED AT 14627200  --  OCCURS AT 14642000
       14632000  14673000
RDCTABLE  --  REAL ARRAY  --  DECLARED AT 00287000
       02200000  02327000 *02665100**04134060* 04137130 *04146200* 04278400  04281800  04365600  04367800  04368200
       04391550  04555650  04657400  04658400  04673850 *04680200**04681950**07016000**07075000**07409200* 08460000
       08472000  08473000 *08582100**12528400**12530000* 12535500 *12538500**12675000**12688000* 12715500 *12716500*
      *12860100**12875000**12876000* 15113100  15115000  16205000  16263300  18556200 *20590400**20590668**20590688*
      *20590710**20595300* 20596150 *22069480**22100500**22185000* 28016200  28028200 *28030800**28250000* 28252000
       37026000 *37046177**37174100* 37192000  37199100  37204000  37276000  37284120  37284130 *37319010* 38118000
       38254100 *38637000**38731000**38788500**39298000* 44177000
RDT  --  REAL  --  DECLARED AT 05951700
       05951800  05956250 *05963000* 05963800  05969100  05975400  05979400
RDYTAPE  --  SUBROUTINE  --  DECLARED AT 12520500
       12540500  12689000  12718000
READALABEL  --  LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37252000
       37253000  37267100
READC  --  LABEL  --  DECLARED AT 14627300  --  OCCURS AT 14660500
       14632100
READEMFROMDISK  --  REAL PROCEDURE  --  DECLARED AT 07376000  --  FORWARD AT 02347150
       02347330 *07395000**07398000* 07448500  08175300  20297000  38804000  39145210
READER  --  LABEL  --  DECLARED AT 04357800  --  OCCURS AT 04394800
       04358400  04380400
READERA  --  REAL  --  DECLARED AT 02112500
       07078000  07079000 *07080000* 08434100 *20489200**20585100**20595350**20606910**20608510**22069490**38120000*
READERB  --  REAL  --  DECLARED AT 02112500
       07082000  07083000 *07084000* 08434200 *20489300**20585125**20595400**20606920**20608520**22069490**38120500*
READIN  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08865000
       08860500
READLABEL  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14698000
       14632100
READQ  --  REAL  --  DECLARED AT 00301100
READSOUGHT  --  LABEL  --  DECLARED AT 14627400  --  OCCURS AT 14660500
       14632200
READSOUGHT2  --  LABEL  --  DECLARED AT 14627400
READTAPE  --  REAL SUBROUTINE  --  DECLARED AT 12544000
       12551000  12556000  12651000
READY  --  REAL  --  DECLARED AT 00121000
      *02197000**04296200**04382800**07013000**07059400* 07059500 *08048000**08090000**08435000**08584000**12531000*
      *12865500* 22074000  22075000  22078000 *22080000* 22087000 *22089000**22109000* 22222000 *37037100**37306000*
      *45152000**45230000* 48012000  48084000
READY  --  DEFINE  --  DECLARED AT 14167000
       14236000
REALEOF  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04419400
       04421800
REALFILECLOSE  --  PROCEDURE  --  DECLARED AT 41000000  --  FORWARD AT 00389000
       00389200
```

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REASON  --  STREAM LABEL  --  DECLARED AT 20032200  --  OCCURS AT 20032725
RECORDRETRY  --  SUBROUTINE  --  DECLARED AT 04555050
        04555700  04567850  04568200  04634300
RECOUNT  --  REAL  --  DECLARED AT 12505000
       *12523000**12623300**12649500**12652500**12653500* 12656000 *12745500*
RECOUNT  --  REAL  --  DECLARED AT 12805000
RECOUNT  --  REAL  --  DECLARED AT 13006000
       *13080100**13081000**13101000*
RECS  --  REAL  --  DECLARED AT 41327400
        41333005  41333010 *41333800* 41334300
RECYCLE  --  STREAM VARIABLE  --  DECLARED AT 04659200
        04661700 *04661900*
RECYCLE  --  LABEL  --  DECLARED AT 41327800  --  OCCURS AT 41331600
        41332800
RED  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12551000
        12545000  12548500
REED  --  REAL SUBROUTINE  --  DECLARED AT 37211000
        37220000  37221000  37252000  37264000  37267000  37267050
REED  --  SUBROUTINE  --  DECLARED AT 38105300
        38106400  38126500  38127000  38127500  38128000  38130500  38138500  38141000
REED  --  SUBROUTINE  --  DECLARED AT 38203300
        38204400  38263500  38292500  38294500
REEL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
        00371000  00372000
REEL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
        00374000  00375000
REEL  --  REAL  --  DECLARED AT 02661000
        02662100  02663000  02668600
REEL  --  REAL  --  DECLARED AT 04668500
       *04674250* 04678900  04680350  04681250  04681850  04683400
REEL  --  REAL  --  DECLARED AT 15063000
        15094000
REEL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
        37000000  37001000 *37046175* 37046177  37046192  37046730  37174100
REEL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37179000
        37177000  37178000  37192000  37216000  37224200  37240200  37261000
REEL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37342000
        37337000  37339000
REEL  --  INTEGER  --  DECLARED AT 38007000
REEL  --  INTEGER  --  DECLARED AT 38102700
        38104900  38105800  38113000 *38118000* 38151000
REEL  --  INTEGER  --  DECLARED AT 38200700
        38202900  38203800  38213500 *38254100**38273000* 38275500  38296750
REEL  --  INTEGER  --  DECLARED AT 39004100
        39086000 *39087500**39092000**39092200* 39143000  39297000  39297100
REEL  --  STREAM VARIABLE  --  DECLARED AT 39297100
        39297200
REELCHANGER  --  PROCEDURE  --  DECLARED AT 15110000
        15116200  16263600
REELNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02637000
        02635000  02636000  02641000
REELNO  --  STREAM VARIABLE  --  DECLARED AT 02641000
REELNO  --  DEFINE  --  DECLARED AT 12518000
        12572500
REELSW  --  DEFINE  --  DECLARED AT 28008400
REELSW  --  DEFINE  --  DECLARED AT 28209200
REFLISTART  --  DEFINE  --  DECLARED AT 28008600
```

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        28048600  28055000
REEL1START  --  DEFINE  --  DECLARED AT 28405800
        28475800
REENTRY  --  REAL SUBROUTINE  --  DECLARED AT 20090700
        20094200  20123000
REFILL  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14681000
        14632100
REL  --  DEFINE  --  DECLARED AT 38382000
        38419000  38503000
REL  --  DEFINE  --  DECLARED AT 38564000
REL  --  DEFINE  --  DECLARED AT 38675000
        38778000
REL  --  DEFINE  --  DECLARED AT 41019000
RELINT  --  REAL  --  DECLARED AT 19901200
        19902000  19902150  19902190  19902350  19903100  19903200
RELTOG  --  DEFINE  --  DECLARED AT 00416520
        04105500
REM  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09717000
        09706100
REM  --  INTEGER  --  DECLARED AT 40005110
       *40027230**40039100* 40040500  40078068  40078069
REMEMBER  --  REAL  --  DECLARED AT 20566310
        20566320  20566812  20566825  20566830  20566840  20567325  20567335  20567340  20567345  20567360 *20569400*
       *20569890*
REMO  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20573300
        20566620  20576600
REMOTE  --  DEFINE  --  DECLARED AT 20247500
REMOTELOGFREE  --  DEFINE  --  DECLARED AT 00081500
REMOTELOGMASK  --  DEFINE  --  DECLARED AT 00081500
REMOV  --  DEFINE  --  DECLARED AT 20225000
REMOVF  --  LABEL  --  DECLARED AT 07300000  --  OCCURS AT 07331000
        07314300  07318010
REMOVF  --  LABEL  --  DECLARED AT 20597800  --  OCCURS AT 20606550
        20597950
REMOVFDECK  --  PROCEDURE  --  DECLARED AT 07298000
        07372800  07410000
REMOVFIT  --  SUBROUTINE  --  DECLARED AT 12589000
        12750000  12752000
REMOVEM  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12749000
        12707000
REMOVER  --  SUBROUTINE  --  DECLARED AT 18244000
        18444000
REPEAT  --  REAL  --  DECLARED AT 20566260
        20566265 *20577250* 20578700
REPLY  --  REAL ARRAY  --  DECLARED AT 00289000
       *02203000**06360520* 06360540 *06463280* 06463300  06463380 *06463760* 08602000  12415000 *12473190**12709750*
        12710000 *12829500* 12861500  12863000  12863500 *12899500* 12900000 *14431518**14581000**14581700* 14582000
        14585000 *14588000**16108000* 16163000 *16181000**16343100* 16950000 *17914100**17914500* 17915000  17917500
       *17919000**18028000* 18029000  18258000 *18540140* 18540200 *18540500* 22014600 *22014640**28293200* 28293800
        28294200  28294400 *36007000**36009000**37046740* 37046800  37046829  37046830  37046835  37046855  37046860
       *37046900**37046920**37047670**37059000**37226000* 37227000  37230000 *37234000**37239000**37241300* 37241400
        37241510 *37241520**37241700* 44162000
RESEARCH  --  REAL SUBROUTINE  --  DECLARED AT 37210100
        37210300  37210400  37227000
RESERVE  --  REAL  --  DECLARED AT 07006040
       *07096000* 07145000  07147000  07148000  07240000
RESERVEDISKSIZE  --  DEFINE  --  DECLARED AT 00005300
```

```
        05954800  06353510
RESETJAR  --  LABEL  --  DECLARED AT 15112700  --  OCCURS AT 15115300
        15115000
RESETUNITS  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04685150
        04685400
RESETV  --  DEFINE  --  DECLARED AT 20228100
        20587800  20594450  20602800  20604350  20608078
RESOLVE  --  REAL STREAM PROCEDURE  --  DECLARED AT 28411200
      *28413400* 28427800
RESTART  --  LABEL  --  DECLARED AT 13019000  --  OCCURS AT 13097000
        13136000
RESTART  --  LABEL  --  DECLARED AT 16914100  --  OCCURS AT 16925100
        16968130
RESTART  --  LABEL  --  DECLARED AT 20382054  --  OCCURS AT 20382520
        20382095
RESTARTING  --  INTEGER  --  DECLARED AT 00419100
        20023800 *44085000*
RESULT  --  PROCEDURE  --  DECLARED AT 00646000
        00650500
RESULT  --  REAL  --  DECLARED AT 04552000
        04555650  04561000 *04566000* 04567010  04567100  04567200  04567770  04567870 *04568100* 04568470  04568480
        04568520  04568530  04580000  04588000  04588060  04588080  04588120  04588160  04588210  04588230  04588280
        04588290  04588410  04588420  04588450  04595000  04602000  04633000  04637000  04638000  04638200  04638800
        04638900  04657400  04658400  04658800
RESULT  --  REAL  --  DECLARED AT 04668650
        04671800 *04672050* 04672150  04672200  04672300  04672850  04673300 *04673500* 04676100  04676250  04676650
        04677000  04683250  04684250  04684450
RESULT  --  REAL  --  DECLARED AT 14624200
RESULT  --  REAL  --  DECLARED AT 22233000
        22243000  22246000  22401000  22405000
RESULT1  --  REAL  --  DECLARED AT 00058000
        46006000
RESULT2  --  REAL  --  DECLARED AT 00058000
        46007000
RESULT3  --  REAL  --  DECLARED AT 00058000
        46008000
RESULT4  --  REAL  --  DECLARED AT 00058000
        46009000
RETMSG  --  DEFINE  --  DECLARED AT 00416100
        22158000
RETRY  --  LABEL  --  DECLARED AT 04261200  --  OCCURS AT 04314600
RETRY  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04678300
        04683850
RETRY  --  LABEL  --  DECLARED AT 22236100  --  OCCURS AT 22331400
        22334800
RETURN  --  LABEL  --  DECLARED AT 00009000  --  OCCURS AT 48110000
        04105890  04105998  04113000  04237000  08175500  08180000  19304000  19685380  19685470
RETURN  --  LABEL  --  DECLARED AT 41600500  --  OCCURS AT 41607400
        41602700
RETURNEM  --  LABEL  --  DECLARED AT 14351100  --  OCCURS AT 14398500
        14407200
RETURNFALSE  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12746500
        12638500  12682500  12687500  12692000
RETURNIOSPACE  --  DEFINE  --  DECLARED AT 00206500
        02068000  02100000  02300000  04199000  04309200  04315600  04426000  07063000  37333000
RETURNMSCW  --  REAL  --  DECLARED AT 20014600
        20014700
RETURNMSCW  --  REAL  --  DECLARED AT 20083800
```

```
        20083900
RETURNMSCW  --  REAL  --  DECLARED AT 20144200
        20144300
RETURNMSCW  --  REAL  --  DECLARED AT 20566100
RETURNMSCW  --  REAL  --  DECLARED AT 20581000
RETURNMSCW  --  REAL  --  DECLARED AT 20584000
RETURNMSCW  --  REAL  --  DECLARED AT 20586800
RETURNMSCW  --  REAL  --  DECLARED AT 20589800
RETURNMSCW  --  REAL  --  DECLARED AT 20591000
RETURNMSCW  --  REAL  --  DECLARED AT 20595000
RETURNMSCW  --  REAL  --  DECLARED AT 20596800
RETURNMSCW  --  REAL  --  DECLARED AT 20600010
RETURNMSCW  --  REAL  --  DECLARED AT 20701500
RETURNRCW  --  REAL  --  DECLARED AT 20014700
        20016600  20080100
RETURNRCW  --  REAL  --  DECLARED AT 20083900
        20085700  20140200
RETURNRCW  --  REAL  --  DECLARED AT 20144300
RETURNRCW  --  REAL  --  DECLARED AT 20566100
        20580340
RETURNRCW  --  REAL  --  DECLARED AT 20581000
        20581080  20583710
RETURNRCW  --  REAL  --  DECLARED AT 20584000
        20586625
RETURNRCW  --  REAL  --  DECLARED AT 20586800
        20589610
RETURNRCW  --  REAL  --  DECLARED AT 20589800
        20590751
RETURNRCW  --  REAL  --  DECLARED AT 20591000
        20594751
RETURNRCW  --  REAL  --  DECLARED AT 20595000
        20596651
RETURNRCW  --  REAL  --  DECLARED AT 20596800
        20597460
RETURNRCW  --  REAL  --  DECLARED AT 20600010
RETURNRCW  --  REAL  --  DECLARED AT 20701500
        20783000
RETURNTOCOM19  --  LABEL  --  DECLARED AT 12513750  --  OCCURS AT 12759000
        12624000  12625500  12747500
RETURNTRUE  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12758250
        12664500  12694000
RETURNVAL  --  REAL  --  DECLARED AT 20566100
        20566245 *20580330*
RETURNVAL  --  REAL  --  DECLARED AT 20581000
RETURNVAL  --  REAL  --  DECLARED AT 20584000
       *20586600*
RETURNVAL  --  REAL  --  DECLARED AT 20586800
        20586950 *20589600*
RETURNVAL  --  REAL  --  DECLARED AT 20589800
       *20590750*
RETURNVAL  --  REAL  --  DECLARED AT 20591000
       *20594750*
RETURNVAL  --  REAL  --  DECLARED AT 20595000
       *20596650*
RETURNVAL  --  REAL  --  DECLARED AT 20596800
       *20597459*
RETURNVAL  --  REAL  --  DECLARED AT 20600010
```

```
RETURNVAL  --  REAL  --  DECLARED AT 20701500
        20702000 *20782000*
REVERSE  --  DEFINE  --  DECLARED AT 14167000
        14234000
REW  --  LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37253000
        37266000
REW  --  DEFINE  --  DECLARED AT 38380000
        38419000  38503000
REW  --  DEFINE  --  DECLARED AT 38563000
REW  --  DEFINE  --  DECLARED AT 38674000
        38752000  38774000  38799000
REW  --  DEFINE  --  DECLARED AT 41018000
REWIND  --  SUBROUTINE  --  DECLARED AT 12525500
        12536000  12743000
REWINDANDLOCK  --  PROCEDURE  --  DECLARED AT 08079000
        16797000
REWINDING  --  LABEL  --  DECLARED AT 04357600  --  OCCURS AT 04382600
        04375400
RHEAD  --  REAL  --  DECLARED AT 38103200
RHEAD  --  REAL  --  DECLARED AT 38201200
        38247500  38250500
RJE  --  STREAM VARIABLE  --  DECLARED AT 08112175
        08112840
RJEINPUTAREAV  --  DEFINE  --  DECLARED AT 00017420
RJEOK  --  REAL  --  DECLARED AT 16911000
       *16927500*
RL  --  DEFINE  --  DECLARED AT 37501000
        37512000  37513000  37516000  37517000  37521200  37531000  37533000  37535000  37542000  37544000
RL  --  REAL  --  DECLARED AT 40004000
       *40039000* 40055000  40060060  40060100  40060400  40061000  40064000  40065080  40065100  40068000 *40321300*
       *40322800**40324120* 40324200  40328000
RLEN  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00396000
        00393000  00394000
RLEN  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37421000
        37418000  37419000  37424200 *37425000* 37426000  37435000  37436000  37446000
RLEN  --  INTEGER  --  DECLARED AT 38003000
        38013400  38024300  38027300  38036000  38038000  38091000  38097000
RLEN  --  INTEGER  --  DECLARED AT 38102300
        38158000
RLEN  --  INTEGER  --  DECLARED AT 38200300
        38277000
RLEN  --  INTEGER  --  DECLARED AT 39002000
        39037000  39038000  39039000 *39088000*
RLEN  --  INTEGER  --  DECLARED AT 40004000
        40016026 *40017295* 40027250  40039000  40039100 *40040500* 40047000  40047100  40055000 *40056100**40060060*
        40060100  40060300 *40060400* 40061000 *40064000* 40065020 *40065040**40065100**40066000**40068000**40078069*
        40078070  40078074 *40078076**40078087* 40078091  40100200  40100500 *40100600**40100800**40101250**40261046*
       *40290200**40321300**40322420**40322444* 40324210
RM  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16134000
        16063000
RMSG  --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20043600
RN  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16531000
        16365000
RO  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16253000
        16064000
ROCKABYE  --  LABEL  --  DECLARED AT 24032800  --  OCCURS AT 24042000
        24033200  24038500
```

```
ROOT -- STREAM LABEL -- DECLARED AT 18820800 -- OCCURS AT 18821100
ROTATE -- LABEL -- DECLARED AT 14629000 -- OCCURS AT 14710000
       14632100
ROUND -- LABEL -- DECLARED AT 20390000 -- OCCURS AT 20447000
       20451000  20484900
ROUND -- LABEL -- DECLARED AT 37004000 -- OCCURS AT 37046040
       37008000  37046900  37047615  37059000
ROUTINE -- REAL -- VALUE PARAMETER -- DECLARED AT 02015000
       02012000  02013000  02019000
ROW -- REAL -- DECLARED AT 06462100
       06462110 *06464100* 06464200
ROW -- REAL -- DECLARED AT 14624100
       14671000  14677000 *14678000**14679000* 14684000  14695000  14711000  14712450
ROW -- DEFINE -- DECLARED AT 40008100
       40042100
ROWS -- REAL -- DECLARED AT 06462100
      *06464050* 06464100
ROWSZ -- REAL -- DECLARED AT 06462100
      *06464600* 06464700
RP -- LABEL -- DECLARED AT 04554300 -- OCCURS AT 04588150
       04588250
RPB -- DEFINE -- DECLARED AT 37501000
       37511000
RR -- LABEL -- DECLARED AT 16355000 -- OCCURS AT 16411000
       16364000
RR -- LABEL -- DECLARED AT 16699000 -- OCCURS AT 16721500
RRNCOUNT -- REAL -- DECLARED AT 00301100
RRRMECH -- INTEGER -- DECLARED AT 00013000
      *02198000**02434310**02665200**04296400**04383200**04383900**07014000**07059300**08039000**08047000**08084000*
      *08089000**08259810**08436000**08583000**12531500**12866000**20601150**20609150* 22074000 *22086000**22092000*
      *22102000**22209200**28028400**37037200**37046170**37248000**37305000**38116000**38237500**38638500**44088000*
      *44214100**45229000* 48012000  48084000
RS -- REAL -- VALUE PARAMETER -- DECLARED AT 08625000
       08624000  08625000  08659000  08671000
RS -- LABEL -- DECLARED AT 16700500 -- OCCURS AT 16820000
       16705000
RSBIT -- DEFINE -- DECLARED AT 00417080
RSET -- LABEL -- DECLARED AT 20597850 -- OCCURS AT 20606700
       20598000
RSIZE -- REAL -- VALUE PARAMETER -- DECLARED AT 37343000
       37338000  37340000
RSLT -- STREAM VARIABLE -- DECLARED AT 00032000
       00033000
RSLT -- REAL -- DECLARED AT 00650500
       00655600  00655800
RSLT -- REAL -- DECLARED AT 04259400
RSLT -- REAL -- DECLARED AT 22235500
       22331400  22332400  22332600
RSTOG -- DEFINE -- DECLARED AT 00416620
       20767000
RSULT -- REAL ARRAY -- DECLARED AT 28804000
      *28831600* 28833000 *28839000* 28848000  28850000  28851000  28852100 *28870000*
RT -- STREAM VARIABLE -- DECLARED AT 08887001
       08890100
RT1 -- REAL -- DECLARED AT 39901000
       39905000  39928000 *39934000**39939000**39945000* 39950000  39955000
RT1 -- STREAM VARIABLE -- DECLARED AT 39905000
```

```
RT1  --  STREAM VARIABLE  --  DECLARED AT 39950000
RT1  --  REAL  --  DECLARED AT 40004000
       *40016400* 40016410  40016420  40016500  40017050  40017200  40017250 *40249100* 40249110 *40249120* 40249130
RUN  --  PROCEDURE  --  DECLARED AT 02025000
       02033000  20047800  22045000
RUN  --  LABEL  --  DECLARED AT 20597700  --  OCCURS AT 20605600
       20597950
RUNAROUND  --  SUBROUTINE  --  DECLARED AT 14182000
       14185000  14207000  14224000
RUNING  --  DEFINE  --  DECLARED AT 20019100
       20038500
RUNING  --  DEFINE  --  DECLARED AT 20088000
RUNING  --  DEFINE  --  DECLARED AT 20148200
       20162800
RUNNING  --  REAL ARRAY  --  DECLARED AT 12365000
       12398500 *12400000**12407000**12417000* 12421500  12437500  12443000 *12445500* 12475000
RUNTHEDECK  --  PROCEDURE  --  DECLARED AT 07457000
       16533000
RUNUMBER  --  REAL  --  DECLARED AT 07003000
      *07420000* 07426100 *07450000* 07462200 *07462300**07462500* 07463000  07469000  07573000  18527900 *44280100*
RUNV  --  DEFINE  --  DECLARED AT 20219500
       20603000  20604550  20604750  20605480  20605600  20608078
RW  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16796000
       16704500
RWL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00380000
RWL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37302000
       37312000
RXIT  --  LABEL  --  DECLARED AT 16056000  --  OCCURS AT 16343000
       16064000  16065000  16080000  16086000  16101000  16103000  16136000  16245000
RY  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16243000
       16062000  16064000  16218000
R1  --  DEFINE  --  DECLARED AT 14546200
       14600500  14602000  14603400  14609000
R1  --  REAL  --  DECLARED AT 16696300
       16696400  16698230
R1  --  INTEGER  --  DECLARED AT 37422100
      *37432000* 37433000
R2  --  REAL  --  DECLARED AT 16696400
       16696500
R3  --  REAL  --  DECLARED AT 16696500
       16696600  16697200  16698240
R4  --  REAL  --  DECLARED AT 16696600
       16696650  16697000  16826900  16828000 *16853200* 16854700
R4  --  STREAM VARIABLE  --  DECLARED AT 16854700
       16855300
R4  --  REAL  --  DECLARED AT 18500100
       18570000  18580000
R4  --  STREAM VARIABLE  --  DECLARED AT 18570000
       18570300
R4  --  REAL  --  DECLARED AT 18700100
      *18710600* 18750100  18770400 *18770900* 18810100  18820100  18820200 *18821800* 18830700  18831500  18834000
       18834700
R4  --  STREAM VARIABLE  --  DECLARED AT 18770400
R4  --  REAL  --  DECLARED AT 19302000
       19303000
R4  --  REAL  --  DECLARED AT 19501000
       19569000  19570000  19572000  19680200  19681000  19685030
```

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R4  --  STREAM VARIABLE  --  DECLARED AT 19680200
        19680300
R5  --  REAL  --  DECLARED AT 18500100
        18503400
R5  --  REAL  --  DECLARED AT 18700100
        18750100  18790100  18790200  18790400  18790600 *18821800* 18835000  18850100  18870700
R5  --  REAL  --  DECLARED AT 19501000
        19590000  19685030  19685340  19685350  19685360 *19685370* 19685380  19685400  19685430  19685452  19685456
        19685460  19685550
R6  --  REAL  --  DECLARED AT 18500100
R6  --  REAL  --  DECLARED AT 18700100
       *18770300* 18770900  18790100  18790200  18790400  18790600  18821800  18831700  18832900
R6  --  STREAM VARIABLE  --  DECLARED AT 18831700
        18832000
R6  --  STREAM VARIABLE  --  DECLARED AT 18832900
        18833200
R6  --  REAL  --  DECLARED AT 19501000
        19575000  19576600  19685370  19685550
R7  --  REAL  --  DECLARED AT 18500100
R7  --  REAL  --  DECLARED AT 18700100
        18770900
R7  --  REAL  --  DECLARED AT 19501000
        19575000  19685550
R8  --  REAL  --  DECLARED AT 18500100
R8  --  REAL  --  DECLARED AT 18700100
        18770900  18860000
R8  --  REAL  --  DECLARED AT 19501000
        19575000
R9  --  REAL  --  DECLARED AT 19501000
        19576100  19576300
S   --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00396000
        00393000  00394000
S   --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00432000
S   --  STREAM VARIABLE  --  DECLARED AT 00657000
        00657200
S   --  REAL  --  DECLARED AT 02057000
       *02061000* 02063000 *02065100* 02067000 *02071000**02077000* 02079000  02089000  02097400  02100000
S   --  INTEGER  --  DECLARED AT 02133200
       *02173100* 02173110  02173150  02173296  02173300
S   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02187300
        02187100  02187200
S   --  REAL  --  DECLARED AT 02190000
        02193000 *02209000**02211010**02212100**02215000* 02215500 *02216000* 02216500  02216510  02217100 *02254000*
        02255000  02256500 *02275200* 02275250  02275350  02275400  02275650  02275700  02275800  02276100 *02276290*
       *02280000* 02287210 *02294000* 02300000
S   --  REAL  --  DECLARED AT 02434120
       *02434470**02434500* 02434510  02434520 *02434540* 02434560 *02434570* 02434580  02434590 *02434610**02434620*
S   --  REAL  --  DECLARED AT 04021000
       *04023000* 04025000
S   --  REAL  --  DECLARED AT 04044000
       *04046000* 04055000  04058000  04060000  04061000  04062000  04063000  04064000
S   --  REAL  --  DECLARED AT 04103050
       *04104000* 04105200  04105950
S   --  STREAM VARIABLE  --  DECLARED AT 04105200
        04105400
S   --  REAL  --  DECLARED AT 04116000
       *04117000* 04118000
```

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S  --  REAL  --  DECLARED AT 04126000
       *04129000* 04131000  04137110  04137140  04137170  04137202  04151220  04151230  04157000  04168000  04169000
        04170800  04178000  04190000  04194100  04194700  04199000  04205000  04224100  04224500  04225000  04228000
        04230000
S  --  REAL  --  DECLARED AT 04257000
        04272000  04279200  04279400  04280400  04281600  04282000 *04284200*  04284400  04284600  04285000  04285800
        04286200  04286400  04299200  04300200  04304600  04309200  04309600  04310400  04312400  04315400  04315600
        04316600  04316800  04317000  04336000  04351800
S  --  STREAM VARIABLE  --  DECLARED AT 04272000
S  --  STREAM VARIABLE  --  DECLARED AT 04280400
        04280800
S  --  STREAM VARIABLE  --  DECLARED AT 04285000
        04285400
S  --  REAL  --  DECLARED AT 04354200
        04366400  04366600  04367000  04368000 *04372000*  04372050  04372100  04373000  04391200  04391560  04391570
        04391600  04398400  04421800  04425400  04425600  04426000 *04426600*  04427000 *04427200*  04427800  04428000
        04429400  04431200  04433200
S  --  STREAM VARIABLE  --  DECLARED AT 04588280
        04588330
S  --  STREAM VARIABLE  --  DECLARED AT 04588410
        04588470
S  --  STREAM VARIABLE  --  DECLARED AT 04647100
        04647150
S  --  REAL  --  DECLARED AT 04668550
       *04682250* 04685200  04685250  04685300 *04685400*
S  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04702000
        04700000  04701000  04707500  04708000  04712000  04723000  04725000 *04729000*  04731000  04732000  04733000
       *04735000* 04736000
S  --  STREAM VARIABLE  --  DECLARED AT 04712000
        04714000 *05610000*  05614000
S  --  STREAM VARIABLE  --  DECLARED AT 05614000
S  --  INTEGER  --  DECLARED AT 05847700
       *05848100* 05848255 *05850110**05850130**05850300*  05850700  05851300 *05852100*  05852200  05852400  05852500
S  --  INTEGER  --  DECLARED AT 05951800
        05951900 *05952995*  05953000  05953040  05953045  05953050 *05961200**05961600**05962000*  05971000 *05971600*
        05971800  05972000 *05976150*  05976400  05976450  05976700  05977100  05977300
S  --  REAL  --  DECLARED AT 06037000
       *06037700**06038000*  06038100
S  --  STREAM VARIABLE  --  DECLARED AT 06038100
S  --  INTEGER  --  DECLARED AT 06069100
        06088900  06100900 *06101000**06109300*  06110500  06113400
S  --  STREAM VARIABLE  --  DECLARED AT 06205200
        06205300
S  --  STREAM VARIABLE  --  DECLARED AT 06381340
        06381350  06381360
S  --  REAL  --  DECLARED AT 07006140
        07012000  07013000  07015000  07016000  07019000  07020000 *07062000*  07063000 *07233000**07234000*
S  --  STREAM VARIABLE  --  DECLARED AT 07256600
        07257000
S  --  STREAM VARIABLE  --  DECLARED AT 07260000
        07260400
S  --  STREAM VARIABLE  --  DECLARED AT 07295020
        07295170
S  --  REAL  --  DECLARED AT 07424000
       *07429100* 07429300 *07433000*  07434000  07435000  07436520  07437200  07438200  07441000  07442000  07452200
        07452600  07452700
S  --  STREAM VARIABLE  --  DECLARED AT 07429100
```

```
S  --  STREAM VARIABLE  --  DECLARED AT 07436520
S  --  STREAM VARIABLE  --  DECLARED AT 07452200
S  --  STREAM VARIABLE  --  DECLARED AT 07461000
       *07461280**07461540*
S  --  REAL  --  DECLARED AT 07542000
       *07547000**07557000* 07559000 *07559180*
S  --  INTEGER  --  DECLARED AT 08255200
        08255400  08276260
S  --  STREAM VARIABLE  --  DECLARED AT 08276260
        08276280
S  --  STREAM VARIABLE  --  DECLARED AT 08471030
       *08471060*
S  --  STREAM VARIABLE  --  DECLARED AT 08471110
       *08471150*
S  --  STREAM VARIABLE  --  DECLARED AT 08472000
       *08478500*
S  --  INTEGER  --  DECLARED AT 08528000
       *08530000*
S  --  REAL  --  DECLARED AT 08704000
       *08712100* 08712110  08712140 *08715100* 08715200  08716300
S  --  REAL ARRAY  --  DECLARED AT 08854000
        08865000  08867000  08868000 *08881000* 08885500  08886300  08887000  08887001  08887010  08887100  08901000
        08912000 *08913000* 08915000  08928000 *08936000**08945000* 08946000  08947200  08947400  08998000
S  --  STREAM VARIABLE  --  DECLARED AT 09535100
        09535300 *09535400* 09535600 *09535800*
S  --  STREAM VARIABLE  --  DECLARED AT 12851000
        12851500
S  --  STREAM VARIABLE  --  DECLARED AT 12887000
        12887500  12888000
S  --  STREAM VARIABLE  --  DECLARED AT 14284000
        14285000  14287000
S  --  REAL ARRAY  --  DECLARED AT 14350000
        14350100 *14358320* 14358330  14358335  14358345 *14360700* 14360900 *14380000* 14381000 *14383700**14383740*
       *14383750* 14383800  14385000  14386000  14388000 *14391000* 14392000  14396100 *14398600* 14398700  14399100
        14399300  14399500  14399700 *14411640* 14411660  14411680  14411700
S  --  INTEGER  --  DECLARED AT 14546100
       *14562000* 14563000  14590000
S  --  REAL  --  DECLARED AT 14624450
S  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 15169000  --  OCCURS AT 15035000
        15168000  15168100  15176000  15177000 *15185000*
S  --  SWITCH LABEL  --  DECLARED AT 16061000
        16077000
S  --  SWITCH LABEL  --  DECLARED AT 16362000
        16378000
S  --  SWITCH LABEL  --  DECLARED AT 16703000
        16714500
S  --  INTEGER  --  DECLARED AT 18199000
       *18225000* 18226000 *18228500* 18229000  18235000  18245500
S  --  STREAM VARIABLE  --  DECLARED AT 18540600
S  --  SWITCH LABEL  --  DECLARED AT 18701200
        18710200
S  --  REAL ARRAY  --  DECLARED AT 19692000
       *19705000* 19707000  19708000  19709000  19711300  19719000  19720000  19738100  19738110  19738120  19738200
        19738210  19739000  19742000  19750000 *19750100* 19751000  19767750 *19767760**19767800**19767900**19768000*
       *19768050**19768200**19768700* 19768750 *19773000**19774000**19774850**19775000**19775100**19776000**19776010*
       *19776100**19776110**19784000* 19785000  19786000
S  --  STREAM VARIABLE  --  DECLARED AT 19767750
```

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S  --  REAL  --  DECLARED AT 19900260
       *19900390* 19900400  19900410  19900430  19900440  19900455  19900490  19900540  19900550  19900565  19900600
        19900650  19900660  19900680  19900720  19900730  19900735  19900745  19900760  19900815  19900840  19900860
S  --  SWITCH LABEL  --  DECLARED AT 19901700
        19902700
S  --  REAL ARRAY  --  DECLARED AT 20013500
        20020800  20026400 *20026600* 20027300  20027400  20028300  20028900  20030200 *20030350**20030400* 20030700
        20030760  20030800  20031500  20034000  20034600  20034610  20035300 *20035800* 20039400  20039700  20039800
        20043700  20044800  20045600  20045700  20045800  20045900  20046200  20046400  20058300
S  --  REAL ARRAY  --  DECLARED AT 20082700
        20088700  20091100  20101000  20101100  20101300  20105200  20105900  20118370  20118900  20129300
S  --  REAL ARRAY  --  DECLARED AT 20143100
       *20150100* 20152100  20162300  20163600  20164200  20170800  20171000  20171100  20171200  20172600  20172700
        20173300  20174400  20176033  20176093 *20178100* 20180400  20180600  20180800  20191400  20195100  20198500
        20199400  20210400
S  --  STREAM VARIABLE  --  DECLARED AT 20427000
        20428000
S  --  STREAM VARIABLE  --  DECLARED AT 20433000
        20434000
S  --  STREAM VARIABLE  --  DECLARED AT 20439000
        20440000
S  --  STREAM VARIABLE  --  DECLARED AT 20582750
        20582800
S  --  SWITCH LABEL  --  DECLARED AT 22065000
        22069060  22069230  22105000
S  --  STREAM VARIABLE  --  DECLARED AT 22069060
        22069080
S  --  STREAM VARIABLE  --  DECLARED AT 22069230
        22069250
S  --  REAL  --  DECLARED AT 22230000
       *22259000* 22266000 *22284000**22286030**22286040* 22286050 *22286180**22301000* 22307000  22309000 *22312000*
       *22314000* 22315000 *22317000**22326400* 22326800  22354000 *22376000**22377000**22390000* 22400000 *22421000*
S  --  STREAM VARIABLE  --  DECLARED AT 28031000
        28031200
S  --  REAL ARRAY  --  DECLARED AT 28804000
        28811000  28812000  28824250 *28855000**28858000* 28865000  28866000  28868100  28868200 *28868300* 28868500
S  --  INTEGER  --  DECLARED AT 30904000
       *30911000* 30912000 *30914000* 30920000
S  --  STREAM VARIABLE  --  DECLARED AT 30920000
        30925000
S  --  INTEGER  --  DECLARED AT 37180200
        37188750 *37209000**37210175* 37210300 *37221200* 37221460 *37229000**37240700* 37241100 *37241610* 37256000
S  --  STREAM VARIABLE  --  DECLARED AT 37256000
        37257000
S  --  STREAM VARIABLE  --  DECLARED AT 37314000
        37315000
S  --  STREAM VARIABLE  --  DECLARED AT 37346000
        37347000
S  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37421000
        37418000  37419000  37425000  37425500
S  --  STREAM VARIABLE  --  DECLARED AT 38104300
        38104400
S  --  STREAM VARIABLE  --  DECLARED AT 38202300
        38202400
S  --  STREAM VARIABLE  --  DECLARED AT 38422000
S  --  STREAM VARIABLE  --  DECLARED AT 38575000
        38576000
```

```
S  --  STREAM VARIABLE  --  DECLARED AT 39086000
        39087000
S  --  INTEGER  --  DECLARED AT 40006100
        40010000  40011000  40012000  40013000  40014000 *40264500* 40265000 *40293020* 40293050  40293060  40293070
        40293080  40293090  40293110  40293120 *40322000**40322400**40322410**40322425* 40322430  40322442  40322800
S  --  STREAM VARIABLE  --  DECLARED AT 41046000
        41047000
S  --  STREAM VARIABLE  --  DECLARED AT 41333005
        41333037
S  --  REAL  --  DECLARED AT 42516000
       *42517020* 42546000  42547000  42551300  42551400
S  --  STREAM VARIABLE  --  DECLARED AT 44093000
        44095000  44096000 *44097000* 44099000
S  --  STREAM VARIABLE  --  DECLARED AT 44144000
        44146000
SA  --  INTEGER  --  DECLARED AT 30904000
       *30912000* 30913000  30916000
SAGE  --  REAL  --  DECLARED AT 14164200
SAIOD  --  NAME  --  DECLARED AT 41017100
SAMEBREAKTAPE  --  DEFINE  --  DECLARED AT 00411000
SANDA  --  LABEL  --  DECLARED AT 04705500  --  OCCURS AT 04712000
        04736500
SAV  --  STREAM VARIABLE  --  DECLARED AT 08015100
        08015400
SAV  --  STREAM VARIABLE  --  DECLARED AT 08450100
        08450400
SAV  --  STREAM VARIABLE  --  DECLARED AT 08551100
        08554000
SAVEARRAYDESC  --  DEFINE  --  DECLARED AT 00017030
        07097000  12848500  20127300  20181000  28455400
SAVEBIT  --  REAL  --  DECLARED AT 14157000
        14159000 *14280000* 14282000  14296000
SAVEBIT  --  DEFINE  --  DECLARED AT 19696500
        19766000  19766500
SAVEF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00017000
        00014000  00015000
SAVEF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24032100
        24032050  24032100  24032900  24036125
SAVEF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24042400
        24042200  24042300  24042650  24043600  24044100  24044110  24045600
SAVEFACTOR  --  DEFINE  --  DECLARED AT 08100900
        08105700  08113300
SAVEINDX  --  DEFINE  --  DECLARED AT 12218000
        12251500  12275000
SAVEINDX  --  DEFINE  --  DECLARED AT 12368500
        12392000  12466000
SAVEMIX  --  PROCEDURE  --  DECLARED AT 02032000
        02042000  20197600  48121200
SAVEND  --  LABEL  --  DECLARED AT 20597800  --  OCCURS AT 20609100
        20608950
SAVENTRY  --  REAL  --  DECLARED AT 41316300
SAVEOPEN  --  PROCEDURE  --  DECLARED AT 00379100
        14243000
SAVETHEUNIT  --  PROCEDURE  --  DECLARED AT 08575000
        16171000
SAVEU  --  REAL  --  DECLARED AT 04668550
       *04673650* 04687300
```

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SAVEV  --  DEFINE  --  DECLARED AT 20233500
        20507300
SAVEWORD  --  REAL  --  DECLARED AT 00425000
        02198000  07014000  08015100 *08427100**08437000* 08438420  08450100  08551100 *08584100**08587000* 08597820
        12527500  12531500  12753500 *12866500**14671000* 20608950  20609200  22094000  22101000  22102000 *37037200*
        37305000 *38122100**38256500* 38633000 *44214100* 44214300
SAVIT  --  SUBROUTINE  --  DECLARED AT 40008300
        40008350  40285700
SAVIT  --  REAL  --  DECLARED AT 42515000
       *42521000*
SA1  --  INTEGER  --  DECLARED AT 05951900
       *05962800* 05962900 *05968900* 05969000  05969150
SB  --  REAL  --  DECLARED AT 22230000
       *22259000* 22283000  22284000 *22286040* 22286170  22286180
Sc  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16407000
        16364000
SCAN  --  SUBROUTINE  --  DECLARED AT 05952745
        05952980  05956400  05956600  05956700  05956850  05957100  05957450
SCAN  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06077800
        06085900
SCAN  --  REAL SUBROUTINE  --  DECLARED AT 20397100
        20397200  20409000  20416000  20416500  20419000  20420000  20423000  20426000  20430000  20432000  20436000
        20438000  20441000  20448100  20451000  20461000  20461320  20461400  20461500  20463000  20467000  20470110
        20471000  20472000  20478510  20484050  20484200  20484250  20495000  20497000  20507000  20508000
ScaN  --  Real SubRoutine  --  DeclaRed AT 20566875
        20566900  20567045  20567075  20567080  20567115  20567158  20567178  20567215  20567225  20567271  20569260
        20569320  20569670  20569710  20569750  20569780  20569800  20569804  20569830  20569846  20569860  20569950
        20569960  20569990  20570065  20570130  20570180  20570190  20570235  20570250  20570430  20570462  20570575
        20573400  20573420  20573430  20573470  20573500  20573760  20576975  20577100
SCAN  --  Real SubRoutine  --  DeclaRed AT 20584150
        20584200  20584350  20584450  20584500  20585200  20585350  20585700
SCAN  --  Real SubRoutine  --  DeclaRed AT 20587050
        20587100  20587800
SCAN  --  REAL SUBROUTINE  --  DECLARED AT 20589950
        20590000  20590050  20590100  20590350  20590500  20590600  20590655  20590670  20590675  20590690  20590695
        20590730
SCAN  --  REAL SUBROUTINE  --  DECLARED AT 20591350
        20591400  20591750  20591800  20591850  20592200  20593050  20593250  20593310  20593320  20594450
ScaN  --  Real SubRoutine  --  DeclaRed AT 20600020
        20600040  20602650  20602700  20604115  20604125  20604200  20604250  20605000  20605360  20605380  20605700
        20605702  20605880  20608072  20608074  20608250  20608300  20608730  20608740
SCAN  --  Real SubRoutine  --  DeclaRed AT 20705000
        20706000  20712000  20716000  20718000  20719000  20780000
SCAN  --  LABEL  --  DECLARED AT 41316500  --  OCCURS AT 41318780
        41318960
SCANDSKTYP  --  SUBROUTINE  --  DECLARED AT 20567205
        20567285  20569630  20570340
SCANEXCEPT  --  SUBROUTINE  --  DECLARED AT 20567000
        20570015  20573530
ScaNEXCePT  --  SUBRoUTiNe  --  DECLARED AT 28447200
        28469400  28478000
SCANMESSAGE  --  SUBROUTINE  --  DECLARED AT 06077200
        06103300
SCANON  --  REAL SUBROUTINE  --  DECLARED AT 20567154
        20567180  20567182  20567280  20569846  20569860  20570464
SCHD  --  STREAM LABEL  --  DECLARED AT 20032150  --  OCCURS AT 20032250
SCHEDBIT  --  DEFINE  --  DECLARED AT 00417070
```

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SCHEDMSG  --  DEFINE  --  DECLARED AT 00416300
        20030760  20034000
SCHEDULEIDS  --  REAL  --  DECLARED AT 06056099
        07260000  08276260  14378100  14383100  19768900  20020800  20088700  20582440  20582750  22069230
SCN  --  REAL PROCEDURE  --  DECLARED AT 20314000
       *20381000* 20397200  20566900  20584200  20587100  20590000  20591400  20596300  20600040  20706000
SCNX  --  LABEL  --  DECLARED AT 20566610  --  OCCURS AT 20567010
        20567115
SCRAMBLE  --  DEFINE  --  DECLARED AT 00419110
        08268900  14562000  18225000  20382120  40293030
SCRATCH  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22175000
        22208000  22213700  22221000
SCRATCHDIRAREAV  --  DEFINE  --  DECLARED AT 00017330
SCRATCHDIRECTORYMASK  --  DEFINE  --  DECLARED AT 00081690
SCRATCHDIRECTORYREADY  --  DEFINE  --  DECLARED AT 00081680
SCRTOG  --  REAL  --  DECLARED AT 08441100
       *08487100* 08497100
SD  --  REAL ARRAY  --  DECLARED AT 20013900
SD  --  REAL ARRAY  --  DECLARED AT 20083100
SD  --  REAL ARRAY  --  DECLARED AT 20143500
SD  --  NAME  --  DECLARED AT 30905000
       *30908000* 30909000  30912000 *30915000* 30917000  30920000  30929500
SDED  --  REAL  --  DECLARED AT 07424100
       *07425700* 07437800
SDEX  --  REAL  --  DECLARED AT 20566100
SDEX  --  REAL  --  DECLARED AT 20581000
SDEX  --  REAL  --  DECLARED AT 20584000
SDEX  --  REAL  --  DECLARED AT 20586800
SDEX  --  REAL  --  DECLARED AT 20589800
SDEX  --  REAL  --  DECLARED AT 20591000
SDEX  --  REAL  --  DECLARED AT 20595000
SDEX  --  REAL  --  DECLARED AT 20596800
SDEX  --  REAL  --  DECLARED AT 20600010
SDEX  --  REAL  --  DECLARED AT 20701500
SDXIT  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06115500
SEARCH  --  REAL SUBROUTINE  --  DECLARED AT 18223000
        18235000  18264000  18281000  18425500
SEARCH  --  REAL SUBROUTINE  --  DECLARED AT 37186000
        37209000  37210000  37210200  37221140  37223000  37229000  37241610
SEARCHCOM  --  SUBROUTINE  --  DECLARED AT 37221100
        37222100
SEARCHDIRECTORY  --  SUBROUTINE  --  DECLARED AT 28414600
        28469800  28473800
SEARCHVAL  --  REAL  --  DECLARED AT 12504000
        12505000  12562000  12590000  12630000 *12682000* 12712000 *12714000**12721000* 12749500 *12750000**12752000*
SEARCHVAL  --  REAL  --  DECLARED AT 12804000
        12805000
SEARCHVAL  --  REAL  --  DECLARED AT 13005000
        13006000
SECBIT  --  DEFINE  --  DECLARED AT 00417075
SECBOMB  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606100
        20599000
SECMSG  --  DEFINE  --  DECLARED AT 00416400
        20511720
SECONDCTR  --  REAL  --  DECLARED AT 22000000
       *22053800**48001000**48006000**48032000**48051000**48079000*
SECREC  --  REAL  --  DECLARED AT 04668700
```

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      *04675700* 04676150  04676500  04684050  04687800
SECRECIO  --  REAL  --  DECLARED AT 04668700
      *04676800* 04683950 *06466700* 06466800  08106040  14569200  18553500  19699000  20588050  37428100  38513000
SECURITYMAINT  --  PROCEDURE  --  DECLARED AT 20511100  --  FORWARD AT 06460000
      20593750
SEC1  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20593000
      20593100  20593850
SEC2  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20593600
      20593350  20593500
SEC3  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511440
      20511330
SEC4  --  LABEL  --  DECLARED AT 20511160  --  OCCURS AT 20511600
      20511459  20511500  20511530  20511560
SEC5  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20593800
      20592750  20593550  20593700
SEF  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18298000
      18403000
SEE  --  LABEL  --  DECLARED AT 37180500  --  OCCURS AT 37207500
      37187130  37195200
SEEK  --  LABEL  --  DECLARED AT 20566600  --  OCCURS AT 20574000
      20576500
SEEK  --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20723000
      20779000
SEEKDC  --  LABEL  --  DECLARED AT 14628000  --  OCCURS AT 14660500
      14632000
SEEKNAM  --  PROCEDURE  --  DECLARED AT 20382010  --  FORWARD AT 02052700
      08104900  20574100  20577325  20593450  20725000  28473200
SEG  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00364000
SEG  --  REAL  --  DECLARED AT 16698200
     *16851200**16851900**16852300**16852800* 16852900 *16853000* 16854000  16854100  16854600  16854800
SEG  --  STREAM VARIABLE  --  DECLARED AT 16854600
      16855500
SEG  --  INTEGER  --  DECLARED AT 24106000
     *24127000* 24129000 *24130000* 24133000  24134000 *24142000* 24143000  24145000 *24165000* 24166000
SEG  --  STREAM VARIABLE  --  DECLARED AT 24134000
      24135000 *24136000* 24139000
SEG  --  REAL  --  DECLARED AT 28003400
      28003600 *28012140* 28012150
SEG  --  REAL  --  DECLARED AT 28401600
     *28409600* 28409800  28410000 *28432800* 28433000  28442000
SEG  --  REAL  --  DECLARED AT 28803000
     *28811000* 28812000  28813000
SEGDICT  --  NAME  --  DECLARED AT 16698240
     *16851100* 16854100
SEGDICT  --  NAME  --  DECLARED AT 22232000
     *22357000* 22371220 *22383050**22422000* 22423000 *22424000*
SEGDICTAREAV  --  DEFINE  --  DECLARED AT 00017520
      14364400  20124900
SEGMENT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06020500
SEGMENT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06036000
      06037100  06037200  06037700
SEGNO  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00363200
      00363000  00363100
SEGNO  --  REAL  --  DECLARED AT 14164000
     *14186020**14186030* 14186100 *14188000**14189000* 14191000  14192000  14212010  14227300
SEGNO  --  STREAM VARIABLE  --  DECLARED AT 14227300
SEGNO  --  REAL  --  DECLARED AT 22231000
```

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        22279000 *22371220**22415000* 22416000 *22419000* 22419500  22420200 *22420500* 22423000  22424000
SEGNO  -- INTEGER  -- VALUE PARAMETER  -- DECLARED AT 24202000
        24200000  24201000  24211000  24212000
SEGNO  -- INTEGER  -- DECLARED AT 41316410
       *41318760* 41318820  41318880 *41319200* 41319320 *41320340* 41320345  41320360 *41321350* 41321500
SEGNR  -- REAL  -- DECLARED AT 12504500
        12505000  12505500 *12563500* 12628000 *12645000*
SEGNR  -- REAL  -- DECLARED AT 12804500
        12805000  12805500
SEGNR  -- REAL  -- DECLARED AT 13005000
        13006000  13041000  13042000 *13046000* 13049000 *13050000*
SEGS  -- REAL  -- DECLARED AT 05952300
        05952400  05953045 *05957650**05976700**05977300**05977700* 05978050  05979050
SEGS  -- STREAM VARIABLE  -- DECLARED AT 05978050
        05978150  05978200
SEGSIZ  -- INTEGER  -- DECLARED AT 41316410
       *41319220* 41319280
SEGSPERROW  -- DEFINE  -- DECLARED AT 08101200
        08109300
SEGZEROAREAV  -- DEFINE  -- DECLARED AT 00017300
        07257400  08275500  20176048  22069100  38434000
SEGO  -- REAL  -- DECLARED AT 07244000
       *07257400* 07257600  07258000
SEGO  -- REAL  -- DECLARED AT 08255400
       *08275500* 08275600  08275750  08276050
SEGO  -- REAL ARRAY  -- DECLARED AT 20013600
       *20034610* 20049000  20049500  20049800  20050000  20053100  20066600
SEGO  -- REAL ARRAY  -- DECLARED AT 20082800
        20110700  20110900  20111100  20111500  20111600  20119000  20121800  20124900  20125000  20125300  20129400
SEGO  -- REAL ARRAY  -- DECLARED AT 20143200
        20176030 *20176033* 20176045 *20176048* 20176054  20176084  20176093  20187300  20192500  20192800  20210500
SEGO  -- REAL  -- DECLARED AT 22061110
        22061120 *22069100* 22069110  22069130
SEGO  -- REAL ARRAY  -- DECLARED AT 38366000
       *38434000* 38435000  38437000  38440000 *38449000**38457000**38474000* 38476000  38478000
SEGO  -- REAL ARRAY  -- DECLARED AT 38550000
SEGO  -- REAL ARRAY  -- DECLARED AT 38657000
SEGO  -- REAL ARRAY  -- DECLARED AT 41007200
SELECTION  -- DEFINE  -- DECLARED AT 00426800
        08836500  08998400  12425200  14432000  19799050  20211600  20609700
SELECTRUN  -- PROCEDURE  -- DECLARED AT 20140800  -- FORWARD AT 00426700
        07264400  08276520  08836500  08998400  12425200  14432000  19799050  20149200  20609700  22069500
SELECTRUN1  -- PROCEDURE  -- DECLARED AT 20011200
        20080200  20151300  20163000  20187800  20189500
SELECTRUN2  -- PROCEDURE  -- DECLARED AT 20080500
        20140300  20186900
SELERR  -- LABEL  -- DECLARED AT 14627200  -- OCCURS AT 14643000
        14632000
SENSE  -- DEFINE  -- DECLARED AT 20247950
        20484855  20713000
SENSETOG  -- REAL  -- DECLARED AT 20704000
       *20713000* 20742000  20747000  20767000
SENSEVAL  -- REAL  -- DECLARED AT 20017200
        20017300 *20065200* 20065700  20065800
SEPARATE  -- DEFINE  -- DECLARED AT 00416800
        02287245  12843600  12890100  38288100  38289100  38590200  38592100  38594100  38741000  38742100
SEPARATION  -- DEFINE  -- DECLARED AT 12519000
```

```
SEPTICTANKING -- DEFINE -- DECLARED AT 00081972
SERIAL -- LABEL -- DECLARED AT 20391000 -- OCCURS AT 20482000
        20395000
SET -- LABEL -- DECLARED AT 20597850 -- OCCURS AT 20606650
        20598000
SETDATE -- PROCEDURE -- DECLARED AT 08343000
        16491000
SETIME -- PROCEDURE -- DECLARED AT 08390000
        16497000
SETNOTINUSE -- PROCEDURE -- DECLARED AT 37302000 -- FORWARD AT 00380000
        02434780  12670500  12757500  28012060  28014100  28015200  28016200  28029800  28037600  28057400  28082800
        28226600  28247200  28251000  28304800  28306000  28306600  28481400  37214000  37218200  37254000  37319100
        37464000  38105600  38106100  38203600  38204100  38634000  38640000  38737000  38743000  38779000  38783000
        38789100
SETSHIFT -- SUBROUTINE -- DECLARED AT 05847900
        05848500  05851300  05852400
SETT -- REAL SUBROUTINE -- DECLARED AT 08681000
        08689000  08689100  08690400  08692800
SETUP -- SUBROUTINE -- DECLARED AT 20567316
        20567365  20570550  20571600
SETUP -- SUBROUTINE -- DECLARED AT 40016000
        40017300  40027245  40044000
SETUPEBTABLE -- REAL PROCEDURE -- DECLARED AT 07003400
       *07003440* 07039700
SETUPINREC -- SUBROUTINE -- DECLARED AT 12614500
        12693500  12746000
SETV -- DEFINE -- DECLARED AT 20228000
SEVEN -- LABEL -- DECLARED AT 04357400 -- OCCURS AT 04425800
        04427000
SEVEN7 -- REAL -- DECLARED AT 40004500
        40016800  40047100  40048000  40060302  40062000  40070000  40078030  40078032  40078040 *40249105* 40323200
SFH -- REAL -- VALUE PARAMETER -- DECLARED AT 20511120
        20511100  20511110  20511490
SFH -- REAL -- DECLARED AT 20566100
SFH -- REAL -- DECLARED AT 20581000
SFH -- REAL -- DECLARED AT 20584000
SFH -- REAL -- DECLARED AT 20586800
SFH -- REAL -- DECLARED AT 20589800
SFH -- REAL -- DECLARED AT 20591000
       *20591950* 20592050  20592100  20592250  20593750  20593950  20594650
SFH -- REAL -- DECLARED AT 20595000
SFH -- REAL -- DECLARED AT 20596800
SFH -- REAL -- DECLARED AT 20600010
SFH -- REAL -- DECLARED AT 20701500
SFID -- REAL -- VALUE PARAMETER -- DECLARED AT 20511120
        20511100  20511110  20511300  20511470 *20511520* 20511660  20511663
SFID -- REAL -- DECLARED AT 20566100
SFID -- REAL -- DECLARED AT 20581000
SFID -- REAL -- DECLARED AT 20584000
SFID -- REAL -- DECLARED AT 20586800
SFID -- REAL -- DECLARED AT 20589800
SFID -- REAL -- DECLARED AT 20591000
       *20591900* 20591950  20593750  20593950  20594650
SFID -- REAL -- DECLARED AT 20595000
SFID -- REAL -- DECLARED AT 20596800
SFID -- REAL -- DECLARED AT 20600010
SFID -- REAL -- DECLARED AT 20701500
```

```
SFINTQ  --  REAL ARRAY  --  DECLARED AT 19901800
       *19903910* 19903940  19903980  19904010 *19904020**19904060* 19904300  19904700  19904850 *19904860* 19905000
       *19905100*
SFINTX  --  DEFINE  --  DECLARED AT 00067100
        19903910  19904400  42501820
SH  --  REAL  --  DECLARED AT 06462100
       *06463280* 06463360 *06463380* 06463720 *06463860**06463880* 06463900 *06463970* 06463982  06463986  06463988
        06463996  06464050  06464200  06464400
SHEAT  --  REAL ARRAY  --  DECLARED AT 07244000
       *07256400**07258000**07258200**07258400**07258600**07259000**07259200**07259400**07259600**07261800**07262000*
       *07262100**07262200**07263800* 07264000
SHEAT  --  REAL ARRAY  --  DECLARED AT 08255600
       *08274250**08276050**08276100**08276150**08276200**08276210**08276220**08276230**08276240**08276350**08276360*
       *08276365**08276400**08276490* 08276500
SHEAT  --  REAL ARRAY  --  DECLARED AT 22061130
       *22069050**22069130**22069140**22069150**22069160**22069180**22069190**22069200**22069210**22069212**22069320*
       *22069330**22069340**22069430* 22069440
SHEET  --  REAL ARRAY  --  DECLARED AT 00136000
        08864000 *08931000**08932000* 08938000  08939000  08942000 *08944000**08944500* 14387000  14389000  14392500
       *14394000**14395000* 19778000  19779000 *19782000**19783000**20021400**20021700* 20025000  20035500  20035700
       *20036100**20036200**20089300**20089600* 20583150  20583250 *20583450**20583500* 44157200
SHEETAREAV  --  DEFINE  --  DECLARED AT 00017450
        07256400  08274250  08881000  08930000  20026600  22069050
SHEETDIDDLER  --  PROCEDURE  --  DECLARED AT 08850000
        08999000  14358375  16741000  18581200  42501200
SHEETFREE  --  DEFINE  --  DECLARED AT 00080300
        14378100  20582440
SHEETLOCKED  --  REAL  --  DECLARED AT 20013300
        20034700 *20035100*
SHEETLOCKED  --  REAL  --  DECLARED AT 20082500
SHEETLOCKED  --  REAL  --  DECLARED AT 20142900
        20150600 *20151000* 20210300
SHEETMASK  --  DEFINE  --  DECLARED AT 00080300
        08880000  08997000  14379000  14396000  19768800  19786000  20034900  20035000  20150800  20150900  20210300
        20582450  20583650  45150000
SHEETMAX  --  DEFINE  --  DECLARED AT 20014900
        20024600  20035300
SHEETMAX  --  DEFINE  --  DECLARED AT 20084100
SHEETMAX  --  DEFINE  --  DECLARED AT 20144500
SHLM  --  REAL  --  DECLARED AT 44014000
       *44202120* 44206200
SHLM  --  REAL  --  DECLARED AT 44207000
SHLM  --  REAL  --  DECLARED AT 45002600
        45135600  45135800
SHORTCOMMUNICATE  --  PROCEDURE  --  DECLARED AT 19500000  --  FORWARD AT 02111500
        48104000
SHORTHEADER  --  SUBROUTINE  --  DECLARED AT 28044400
        28088000  28093200  28098400
SI  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16544000
        16365000
SID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08850100
        08850000  08885500  08901000  08901500  08904050  08912000  08928000
SIGNEDON  --  REAL  --  DECLARED AT 12505500
        12536500  12540000  12695000 *12701500* 12702000  12702500  12703000 *12704500*
SIGNEDON  --  REAL  --  DECLARED AT 12805500
       *12878500* 12886000
SIGNEDON  --  REAL  --  DECLARED AT 13007000
```

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SIGNIN  --  LABEL  --  DECLARED AT 12813000  --  OCCURS AT 12848000
        12814000
SIGNIN  --  DEFINE  --  DECLARED AT 13027000
        13099000
SIGNOFF  --  PROCEDURE  --  DECLARED AT 06180000  --  FORWARD AT 02696300
        06330000  14430800  45130000
SIN  --  STREAM LABEL  --  DECLARED AT 18820800  --  OCCURS AT 18821300
SIX  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04424400
        04387400  04394000  04407600  04409400  04417000  04420800  04422200
SIXTY  --  DEFINE  --  DECLARED AT 08256200
        08268950
SIZ  --  STREAM VARIABLE  --  DECLARED AT 06077900
        06078700
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00016000
        00014000  00015000
SIZE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019300
        00019100  00019200
SIZE  --  INTEGER  --  DECLARED AT 00026000
       *00038000* 00039035  00040000  00041000  00046000
SIZE  --  FIELD  --  DECLARED AT 00062070
        07097000  08274250  08881000  08930000  12848500  20026600  20059120  20089820  20127300  20176048  20181000
        28451800  28455400  28855000  38107000  38107100  38205000  38205100  38434000  42477000  42479000
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00363200
        00363000  00363100
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00396000
        00393000  00394000
SIZE  --  REAL  --  DECLARED AT 04554500
       *04638200* 04638900 *04658800* 04658900
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 06003000
        06000000  06001000 *06004010**06004100* 06010000  06011000 *06015000* 06018000
SIZE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06063000
        06061500  06062000  06065000
SIZE  --  REAL  --  DECLARED AT 09602100
SIZE  --  REAL  --  DECLARED AT 12360500
       *12387500* 12388500  12391500  12392000  12395000  12395500
SIZE  --  REAL  --  DECLARED AT 14158000
       *14186140* 14186150 *14194000**14198400**14198800* 14199000  14203020  14204100  14206000  14212000  14218000
        14222000  14225000 *14227210* 14227300  14227400 *14249000* 14252000  14265000 *14281000* 14284000
SIZE  --  STREAM VARIABLE  --  DECLARED AT 14204100
SIZE  --  REAL  --  DECLARED AT 15536000
       *15545008* 15546000  15548000
SIZE  --  REAL  --  DECLARED AT 15600300
       *15601400**15601500* 15601600  15602600  15602680
SIZE  --  REAL  --  DECLARED AT 19901500
       *19903910* 19903920  19903970  19904000  19904300  19904340  19904450  19904700
SIZE  --  REAL  --  DECLARED AT 24004000
       *24019000**24024000*
SIZE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24032100
        24032050  24032100  24033900  24034100  24035100  24035500  24035600  24036300  24037200  24037400  24038800
        24038900
SIZE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24042400
        24042200  24042300  24042700  24043600
SIZE  --  STREAM VARIABLE  --  DECLARED AT 24042700
SIZE  --  INTEGER  --  DECLARED AT 24108000
        24132000  24141000 *24151000*
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 24202000
        24200000  24201000
```

```
SIZE  --  REAL  --  DECLARED AT 28003200
        *28095800* 28096400
SIZE  --  REAL  --  DECLARED AT 28203600
        28203800 *28233800**28235200* 28235600  28237400
SIZE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37421000
        37418000  37419000  37427000  37443000
SIZE  --  DEFINE  --  DECLARED AT 40008150
        40039000  40060400  40064000  40068000  40068100
SIZE  --  REAL  --  DECLARED AT 42514000
        *42533000* 42535500  42537000  42539000
SIZEDIV64  --  STREAM VARIABLE  --  DECLARED AT 04656300
        04656900
SIZEDIV64  --  STREAM VARIABLE  --  DECLARED AT 04657600
        04658000
SIZEF  --  REAL  --  DECLARED AT 24032700
        *24033600**24033800* 24033900 *24034000* 24034100 *24035100* 24035500 *24036900**24037100* 24037200 *24037300*
        24037400 *24038800* 24038900
SK  --  STREAM VARIABLE  --  DECLARED AT 04588290
        04588330  04588360  04588370
SK  --  STREAM VARIABLE  --  DECLARED AT 04588420
        04588470
SK  --  STREAM LABEL  --  DECLARED AT 20054400  --  OCCURS AT 20054400
SKAN  --  LABEL  --  DECLARED AT 12214500  --  OCCURS AT 12224000
        12290500
SKAN  --  REAL SUBROUTINE  --  DECLARED AT 20566905
        20566950  20566955  20567230  20569320
SKBLK  --  LABEL  --  DECLARED AT 40008050
SKEL  --  REAL ARRAY  --  DECLARED AT 38366000
        *38435000* 38439000 *38440000**38442100* 38443000  38449000  38450000 *38451000* 38452000  38458000  38460000
        *38465000* 38466000  38471000
SKEL  --  REAL ARRAY  --  DECLARED AT 38550000
SKEL  --  REAL ARRAY  --  DECLARED AT 38657000
SKEL  --  REAL ARRAY  --  DECLARED AT 41007200
SKIP  --  LABEL  --  DECLARED AT 20085800  --  OCCURS AT 20108800
        20102100
SKIP  --  LABEL  --  DECLARED AT 20701000  --  OCCURS AT 20735000
        20739000
SKIPDIR  --  DEFINE  --  DECLARED AT 28008800
        28025200  28058400  28068800
SKIPDIR  --  DEFINE  --  DECLARED AT 28209400
        28219800
SKIPFILE  --  DEFINE  --  DECLARED AT 28009600
        28086400  28092800
SKIPFILE  --  DEFINE  --  DECLARED AT 28210200
        28242800  28253400  28260600
SKIPIT  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07219000
        07161000
SKIPPER  --  LABEL  --  DECLARED AT 28211000  --  OCCURS AT 28303200
        28272800  28302600  28303800
SKN  --  LABEL  --  DECLARED AT 20584250  --  OCCURS AT 20585700
        20585730
SKP  --  LABEL  --  DECLARED AT 12214500  --  OCCURS AT 12254000
        12252500
SL  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16792500
        16704500
SL  --  LABEL  --  DECLARED AT 19508010  --  OCCURS AT 19526100
        19511000  19512000  19513000  19513010
```

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SLAPITOFF  --  SUBROUTINE  --  DECLARED AT 02195000
        02261300  02261400  02270000  02328000
SLASH  --  DEFINE  --  DECLARED AT 20216000
        20377000  20419000  20567075  20569950  20570180  20573420  20590500  20718000
SLATE  --  REAL ARRAY  --  DECLARED AT 00022000
       *02018000**02019000* 44166000  48054000  48055000  48055200
SLATEND  --  DEFINE  --  DECLARED AT 00023100
        02016000  48052000
SLATESIZE  --  DEFINE  --  DECLARED AT 00023100
        02016000  44151050  44166000  48052000
SLEAP  --  LABEL  --  DECLARED AT 12812500  --  OCCURS AT 12861000
        12862500  12866500
SLEAP  --  LABEL  --  DECLARED AT 14627400
SLEEP  --  DEFINE  --  DECLARED AT 00021500
        00039055  00050000  01260455  01261170  02009000  02107000  02173085  02176000  02196000  02275700  02434480
        04045200  04249000  04377400  04378000  04557200  04558000  04567000  04655700  04671400  04671550  04672100
        05703500  05842300  05849300  05960700  06022600  06066000  06090700  06098600  06099100  06103500  06103700
        06215000  06257000  06361700  06415000  06464900  07001640  07059200  07059500  07139500  07146000  07149000
        07171000  07177000  07232000  07272500  07301000  07371300  07392000  07414000  07426000  07562000  08046000
        08088000  08268000  08378000  08386000  08421000  08569300  08571000  08580000  08627000  08670000  08689200
        08830000  08866000  08880000  08915000  08933000  08935000  08940000  08943000  08946000  09617000  09630000
        09637000  09680000  12386000  12530500  13051000  14186120  14198200  14205000  14206100  14237000  14292110
        14351320  14358450  14358588  14360400  14361000  14383000  14384000  14390000  14393000  14398800  14399400
        14541130  14560000  14588100  17001400  18032010  18033000  18273000  18425400  18523400  18730300  18780100
        18841400  18844000  19303000  19685380  19685460  19743000  19768800  19900400  19902130  19902850  19903650
        19903907  20034900  20119600  20150800  20154000  20407000  20588600  20601640  22009000  22049000  22905000
        24043000  24045100  28080400  28440800  37304000  37394150  38092000  38250500  38285500  38372000  38555000
        38574000  38668000  40311000  40317220  41311100  41317300  41320310  41328200  42476000  42501650  48042000
SLEEPER  --  INTEGER  --  DECLARED AT 05952500
        05979400
SLEPE  --  LABEL  --  DECLARED AT 18006000  --  OCCURS AT 18027000
        18030000
SLOW  --  DEFINE  --  DECLARED AT 20247700
        20484650  20484750  20567250
SM  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16747500
        16704000
SM  --  DEFINE  --  DECLARED AT 28007000
        28078000  28078800
SMID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20511120
        20511100  20511110  20511300  20511470 *20511520* 20511660  20511662
SMID  --  REAL  --  DECLARED AT 20566100
SMID  --  REAL  --  DECLARED AT 20581000
SMID  --  REAL  --  DECLARED AT 20584000
SMID  --  REAL  --  DECLARED AT 20586800
SMID  --  REAL  --  DECLARED AT 20589800
SMID  --  REAL  --  DECLARED AT 20591000
       *20591800* 20591950  20592050  20593750  20593950  20594650
SMID  --  REAL  --  DECLARED AT 20595000
SMID  --  REAL  --  DECLARED AT 20596800
SMID  --  REAL  --  DECLARED AT 20600010
SMID  --  REAL  --  DECLARED AT 20701500
SMWSTOPPED  --  DEFINE  --  DECLARED AT 00081630
SMWSTOPPEDMASK  --  DEFINE  --  DECLARED AT 00081630
SN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
        00454000  00454100
SN  --  REAL  --  DECLARED AT 02057000
       *02063000* 02064000  02065100  02068000  02071000
```

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SN  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
        17000000  17000200
SNOOZE  --  PROCEDURE  --  DECLARED AT 02000000  --  FORWARD AT 00020000
        00039055  00050000  01240100  01260455  01261170  02040000  02107000  02173085  02176000  02196000  02275700
        02434480  04045200  04249000  04377400  04378000  04557200  04558000  04567000  04655700  04671400  04671550
        04672100  05703500  05842300  05849300  05960700  06022600  06066000  06090700  06098600  06099100  06103500
        06103700  06215000  06257000  06361705  06415000  06464900  07001640  07059200  07059500  07139500  07146000
        07149000  07171000  07177000  07232000  07272500  07301000  07371300  07392000  07414000  07426000  07562000
        08046000  08088000  08268000  08378000  08386000  08421000  08569300  08571000  08580000  08627000  08670000
        08689200  08830000  08866000  08880000  08915000  08933000  08935000  08940000  08943000  08946000  09617000
        09630000  09637000  09680000  12386000  12530500  13051000  14186120  14198200  14205000  14206100  14237000
        14292110  14351320  14358450  14358588  14360400  14361000  14383000  14384000  14390000  14393000  14398800
        14399400  14541130  14560000  14588100  17001400  18032010  18033000  18273000  18425400  18523400  18730300
        18780100  18841400  18844000  19303000  19685380  19685460  19743000  19768800  19900400  19902130  19902850
        19903650  19903907  20034900  20119600  20150800  20154000  20407000  20588600  20601640  22009000  22049000
        22332400  22905000  24043000  24045100  28080400  28440800  37304000  37394150  38092000  38250500  38285500
        38372000  38555000  38574000  38668000  40311000  40317220  41311100  41317300  41320310  41328200  42476000
        42501650  48042000
SOCK  --  REAL ARRAY  --  DECLARED AT 40005200
       *40249120**40261044**40261048* 40292050  40334070  40356550
SOFTI  --  REAL  --  DECLARED AT 00157100
       *14358391**20111500* 22356100  22365100  42501810 *44092100* 48032100
SOMECOPIED  --  DEFINE  --  DECLARED AT 28209100
        28264900  28304500
SOMEWHERE  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37047800
        37046020  37048310
SORTFILE  --  DEFINE  --  DECLARED AT 15072000
SOURCE  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20292200
        20292000 *20295100**20303000*
SOURCE  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20314200
        20314000  20325000  20328000  20355000  20374400
SOURCE  --  STREAM VARIABLE  --  DECLARED AT 20328000
        20330000 *20350000*
SOURCE  --  REAL  --  NAME PARAMETER  --  DECLARED AT 20386000
        20384000  20397200
SOURCE  --  REAL  --  DECLARED AT 20566100
        20566900
SOURCE  --  REAL  --  DECLARED AT 20581000
SOURCE  --  REAL  --  DECLARED AT 20584000
        20584200  20585715 *20585725*
SOURCE  --  REAL  --  DECLARED AT 20586800
        20587100
SOURCE  --  REAL  --  DECLARED AT 20589800
        20590000
SOURCE  --  REAL  --  DECLARED AT 20591000
        20591400
SOURCE  --  REAL  --  DECLARED AT 20595000
        20596300
SOURCE  --  REAL  --  DECLARED AT 20596800
SOURCE  --  REAL  --  DECLARED AT 20600010
        20600040 *20602100**20602150* 20604105  20604850  20605050  20608070  20608200  20608700 *20609350*
SOURCE  --  REAL  --  DECLARED AT 20701500
        20706000
SOURCEFILEFOUND  --  DEFINE  --  DECLARED AT 28405600
        28431200  28458200  28481200
SP  --  LABEL  --  DECLARED AT 38661000  --  OCCURS AT 38746000
        38662000
```

```
SP  --  LABEL  --  DECLARED AT 41005000  --  OCCURS AT 41054000
        41006000
SPACE  --  DEFINE  --  DECLARED AT 00013500
        01250700  02173110  02206000  02218000  02255000  02347320  02434320  04251100  04272000  04359600  04371930
        04401000  04567320  04567790  04568550  04644000  04672500  04672950  04674750  04675000  04683500  04686100
        04686950  04707000  05703000  05709000  05844110  05844930  05850120  05953070  05961400  05966600  06022300
        06074200  06077500  06090000  06095100  06103900  06107200  06107300  06109400  06188100  06195125  06206140
        06211100  06353545  06353600  06353680  06360600  06380140  06380400  06463880  06464000  07139530  07155000
        07214000  07274000  07304000  07371200  07429100  07564000  08104600  08112000  08115300  08267500  08276410
        08380000  08424000  08437200  08438400  08498000  08568600  08577700  08597800  08604000  08605000  08629000
        08631000  08690000  08693200  08709800  08712100  08715100  08775000  08831000  08886000  09505000  09535000
        09639000  09680200  12321100  12407000  12408000  12468000  12473210  12708250  12823000  12833000  12892500
        14411640  14415200  14431530  14559250  14570100  15022000  15113800  15115700  15501200  15546000  15549000
        15600800  15604250  15614000  15622000  16041100  16506000  16756000  16827100  16828300  16956040  17003450
        17909000  18014000  18048000  18273040  18276000  18280000  18528200  18570100  18790600  18791620  18820200
        18830600  19680200  19685025  19768768  20021920  20101300  20153700  20157700  20289148  20374415  20382058
        20511370  20567005  20567020  20592400  20600400  20601500  20601720  20607060  22008000  22012000  22069000
        22069350  22163000  22904000  22909000  28018000  28023800  28056400  28058600  28065000  28213400  28218400
        28263400  28267400  28291000  28304510  28428800  28432400  28443000  28458800  28466600  28856000  30907000
        30915000  32000300  32000500  32100500  37036300  37046520  37240700  37249000  37314200  37360000  37454000
        37508000  38218000  38399000  38625000  39934000  39939000  39958000  40016240  40016400  40249100  40249120
        40263000  40275200  40275500  40292212  40320200  41317790  41318210  41320600  41333010  41602900  44202120
        44202500  44203200  44256100  44262500  44274500  45075600  45101000  45130000  45131100  45135040  45135110
        45135170  45155000
SPACE  --  REAL  --  DECLARED AT 14164100
       *14204000* 14288000
SPACE  --  LABEL  --  DECLARED AT 14628100  --  OCCURS AT 14675000
        14632000
SPACEA  --  SUBROUTINE  --  DECLARED AT 22068000
        22073000  22115070  22124000  22196000
SPACEBACK  --  SUBROUTINE  --  DECLARED AT 04568300
        04611000  04638300  04657500  04662700  04568410  04568470  04568500 *04574000**04576000* 04578000  04592000
        04597000 *04606000* 04638650  04638900
SPACEMASK  --  REAL  --  DECLARED AT 04552000
        04554000 *04573000* 04576000  04585000  04588020  04588100  04588130  04592000  04597000
SPACEND  --  LABEL  --  DECLARED AT 12512500  --  OCCURS AT 12558000
        12556500
SPACER  --  DEFINE  --  DECLARED AT 28006600
        28021800  28033800  28042600  28090200
SPACER  --  DEFINE  --  DECLARED AT 28207000
        28216400  28223000  28230000  28262200  28303200
SPACER  --  LABEL  --  DECLARED AT 39054000
SPACESTACK  --  REAL  --  DECLARED AT 23500000
        24043500 *44148100**44173010* 44189500  44189550
SPACESTACKSIZE  --  DEFINE  --  DECLARED AT 00013870
        44151083  44173010  44189550
SPACETOFILE  --  REAL SUBROUTINE  --  DECLARED AT 12553500
        12558500  12690500  12718500
SPACING  --  REAL  --  DECLARED AT 04554800
        04568200 *04568425**04568485**04592100**04600100**04628100**04634100**04654600*
SPACIT  --  SUBROUTINE  --  DECLARED AT 28042200
        28048000  28087000  28100000
SPACIT  --  SUBROUTINE  --  DECLARED AT 28229600
        28297200
SPACITSW  --  DEFINE  --  DECLARED AT 28009000
        28025600  28026200  28043600  28043800
SPACITSW  --  DEFINE  --  DECLARED AT 28209600
```

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        28220200  28220800  28231000  28231200
SPDC  --  LABEL  --  DECLARED AT 39009000  --  OCCURS AT 39237000
        39235200  39236160
SPDVAL  --  REAL  --  DECLARED AT 20017300
        20017400 *20065300* 20065500  20065600
SPECI  --  DEFINE  --  DECLARED AT 20218000
        20380500
SPECIAL  --  DEFINE  --  DECLARED AT 20247000
SPEED  --  DEFINE  --  DECLARED AT 05780020
        05843000  06381320  16828100
SPER  --  REAL  --  DECLARED AT 37422000
       *37424000* 37424100  37424200  37434000  37435000  37437000  37443000  37446000
SPIT  --  LABEL  --  DECLARED AT 08284000  --  OCCURS AT 08301600
        08294000  08295800
SPIT  --  LABEL  --  DECLARED AT 08734000  --  OCCURS AT 08798000
        08755000
SPIT  --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08947100
        08915100
SPLAT  --  LABEL  --  DECLARED AT 20586715  --  OCCURS AT 20587650
        20589150
SPN  --  LABEL  --  DECLARED AT 39007000  --  OCCURS AT 39240000
        39008000
SPO  --  LABEL  --  DECLARED AT 04357800  --  OCCURS AT 04389800
        04358400
SPO  --  LABEL  --  DECLARED AT 20391000  --  OCCURS AT 20481000
        20395000
SPO  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22216000
        22065000
SPO  --  LABEL  --  DECLARED AT 39049000  --  OCCURS AT 39236900
        39050000
SPOEDNULLOG  --  DEFINE  --  DECLARED AT 00081400
SPOIT  --  SUBROUTINE  --  DECLARED AT 16070000
        16104000  16131000  16250000
SPOIT  --  SUBROUTINE  --  DECLARED AT 16371000
        16532000
SPOIT  --  SUBROUTINE  --  DECLARED AT 16708000
        16796500
SPOT  --  LABEL  --  DECLARED AT 20586715  --  OCCURS AT 20588900
        20588020
SPOUT  --  DEFINE  --  DECLARED AT 00451600
        01261100  02256500  02434870  04252700  04371950  05714000  05953210  05979400  06022500  06077000  06084500
        06090600  06115900  06195185  06353700  06360510  06361610  07139565  07219000  07254000  07290000  07294000
        07295235  07374100  07429300  07437200  07452600  07468100  07483000  08052000  08093000  08116050  08116950
        08301600  08315000  08340000  08374000  08415000  08428000  08437450  08480000  08507000  08573200  08597000
        08621500  08669000  08690600  08693000  08695200  08848000  08906000  08911000  08926000  08927000  09676000
        09682800  12321000  12471500  12709500  12829000  12836000  14580000  15040000  15438150  15604600  16343700
        16689300  16829600  16965000  16967500  17914000  18529100  18570800  18835600  20044800  20102000  20153900
        22115070  22124000  22172000  22196000  28018400  28024600  28057400  28065600  28219200  28268000  28293000
        28304530  32100600  37037000  37046270  37241100  37318000  39928000  39955000  40292222  40320600  41321100
        41323100  44206300  44275500  45131700  45135080  45135130  45135190  45157000
SPOUTER  --  PROCEDURE  --  DECLARED AT 02132300  --  FORWARD AT 00451800
        01261100  02256500  02434870  04252700  04352200  04371950  04376600  04383400  04386800  04393000  04404800
        04416400  04567600  04567830  04568590  04648000  04672700  04673150  04674850  04675250  04683800  04686350
        04687050  05714000  05953210  05979400  06022500  06077000  06084500  06090600  06115900  06195185  06206240
        06353551  06353700  06360510  06361610  07139565  07219000  07255000  07290000  07294000  07295235  07351000
        07374100  07429300  07437200  07452600  07468100  07483000  07511000  08052000  08093000  08116050  08116950
        08301800  08315000  08340000  08374000  08415000  08428000  08437450  08480000  08507000  08544700  08573200
```

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        08597000  08621500  08669000  08690600  08693000  08695200  08784000  08798500  08848000  08901000  08906000
        08911000  08926000  08927000  08947400  09676000  09682800  12321000  12471500  12473280  12709500  12829000
        12836000  14430400  14481600  14580000  15040000  15114300  15115900  15437100  15438150  15604600  16343700
        16689300  16829600  16902800  16956090  16965000  16967500  17005400  17914000  18529100  18570800  18791610
        18791670  18835600  19768782  20034000  20044800  20102000  20118370  20153900  20374430  20511420  20511720
        20592700  20600470  20607600  22115070  22124000  22172000  22196000  28018400  28024600  28057400  28065600
        28219200  28264600  28268000  28293000  28304530  30930000  32002300  32100600  37037000  37046270  37241100
        37318000  37383000  39928000  39955000  40292222  40320600  41321100  41323100  41333090  44206300  44275500
        45131700  45135080  45135130  45135190  45157000
SPOUTERR  --  LABEL  --  DECLARED AT 06069900  --  OCCURS AT 06084400
        06085100  06085600
SPOUTIT  --  DEFINE  --  DECLARED AT 00451700
SPOUTITNOW  --  SUBROUTINE  --  DECLARED AT 39903000
        39929000  39935000  39940000  39956000
SPOUTMSGAREAV  --  DEFINE  --  DECLARED AT 00017360
        02142100  02181000  04004170  06037300  06380350  14603750  18013000  40278150
SPOUTUNIT  --  DEFINE  --  DECLARED AT 20511148
        20511420
SPOUTUNIT  --  REAL  --  DECLARED AT 20566100
        20575050  20575100  20575200  20575600  20576400  20576405  20577475  20577775  20577925  20578000  20578150
        20578550
SPOUTUNIT  --  REAL  --  DECLARED AT 20581000
SPOUTUNIT  --  REAL  --  DECLARED AT 20584000
        20585375
SPOUTUNIT  --  REAL  --  DECLARED AT 20586800
        20587550  20588900
SPOUTUNIT  --  REAL  --  DECLARED AT 20589800
SPOUTUNIT  --  REAL  --  DECLARED AT 20591000
        20592700  20593750  20594350
SPOUTUNIT  --  REAL  --  DECLARED AT 20595000
SPOUTUNIT  --  REAL  --  DECLARED AT 20596800
SPOUTUNIT  --  REAL  --  DECLARED AT 20600010
        20600120  20600470 *20602460* 20607040  20607600  20608870
SPOUTUNIT  --  REAL  --  DECLARED AT 20701500
        20704270  20767000  20769400  20772000
SPOUTUNIT  --  DEFINE  --  DECLARED AT 28007400
        28011200
SPOUTUNIT  --  DEFINE  --  DECLARED AT 28206800
        28212000  28270820
SPOUTUNIT  --  DEFINE  --  DECLARED AT 28407600
        28408400  28434800  28474600
SPRT  --  REAL ARRAY  --  DECLARED AT 22234000
       *22260000* 22261000 *22263000* 22264000  22284100 *22284400**22356150* 22356200 *22365150* 22365200
SQ  --  LABEL  --  DECLARED AT 16357000  --  OCCURS AT 16609000
        16366000
SQALL  --  REAL  --  DECLARED AT 06069000
        06069100 *06085700* 06101400  06107900  06108400  06108700
SQIT  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06111300
        06111800
SQSIZE  --  INTEGER  --  DECLARED AT 06069200
        06069300  06073900 *06085800* 06101600  06108000  06108400
SQUASHMESS  --  SUBROUTINE  --  DECLARED AT 06073700
        06108100  06108900  06109100  06114500
SR  --  REAL  --  DECLARED AT 19694000
      *19711400* 19721000  19736000  19740000  19741000  19744000  19757000  19762000
SRCE  --  STREAM VARIABLE  --  DECLARED AT 07003640
       *07003820* 07003910
```

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SRCHOUT  --  LABEL  --  DECLARED AT 37180500  --  OCCURS AT 37208500
        37195800
SS  --  REAL  --  DECLARED AT 04705500
       *04707500* 04712000
SS  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16391000
        16363000
SSYSJOBF  --  DEFINE  --  DECLARED AT 00134030
        08887010  20152100  20587310
SSZ  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02015000
        02012000  02013000  02019000  04647350
ST  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16162000
        16063000
ST  --  REAL  --  DECLARED AT 20566100
       *20567020* 20567025  20567035 *20569320**2056935O**20569380* 20569440 *20570020* 20570040  20570050
ST  --  REAL  --  DECLARED AT 20581000
ST  --  REAL  --  DECLARED AT 20584000
ST  --  REAL  --  DECLARED AT 20586800
ST  --  REAL  --  DECLARED AT 20589800
ST  --  REAL  --  DECLARED AT 20591000
       *20592950**20593400**20593550* 20593800
ST  --  REAL  --  DECLARED AT 20595000
ST  --  REAL  --  DECLARED AT 20596800
ST  --  REAL  --  DECLARED AT 20600010
ST  --  REAL  --  DECLARED AT 20701500
ST  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28099800
        28098000
STA  --  REAL  --  DECLARED AT 08099775
       *08101520* 08116050  08116950
STA  --  REAL  --  DECLARED AT 08283000
       *08292500* 08295200 *08297000* 08298000
STA  --  DEFINE  --  DECLARED AT 12518700
        12755500
STA  --  REAL  --  DECLARED AT 14624200
STA  --  REAL  --  DECLARED AT 38364100
STA  --  REAL  --  DECLARED AT 38548100
STA  --  REAL  --  DECLARED AT 38655100
STA  --  REAL  --  DECLARED AT 41004100
STACK  --  DEFINE  --  DECLARED AT 20233000
STACK  --  REAL  --  DECLARED AT 22230000
       *22266000* 22267000  22270200  22272000  22279000  22281000  22283000 *22286050* 22286060  22286090  22286120
        22286150  22286170  22286190 *22326800* 22327200  22328400  22329000  22329200
STACKAREAV  --  DEFINE  --  DECLARED AT 00017310
STACKLOC  --  REAL  --  DECLARED AT 20013200
STACKLOC  --  REAL  --  DECLARED AT 20082400
        20118600 *20118900* 20119000  20119900  20120100  20121100  20121200  20123400  20123500  20123600  20123700
        20123800
STACKLOC  --  REAL  --  DECLARED AT 20142800
       *20176090* 20176096  20176135  20176141 *20176144* 20191000  20192800  20192900  20193000  20193100
STACKMASK  --  DEFINE  --  DECLARED AT 00080400
        06410000  48049000
STACKOVERFLOW  --  LABEL  --  DECLARED AT 00024270  --  OCCURS AT 46029000
        04103100  08173200  14014100  19525000  31005010  42517100  48025200
STACKPRTAREAV  --  DEFINE  --  DECLARED AT 00017530
        20176093
STACKUSE  --  DEFINE  --  DECLARED AT 00080400
        02028000  44180000  48048000  48054600
STACURR  --  DEFINE  --  DECLARED AT 08256000
```

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START  -- LABEL  -- DECLARED AT 00024270  --  OCCURS AT 46040000
        00055100
START  -- LABEL  -- DECLARED AT 04261200  --  OCCURS AT 04304000
        04300500  04302600
START  -- LABEL  -- DECLARED AT 04357200  --  OCCURS AT 04372200
        04379000  04397800
START  -- REAL  -- DECLARED AT 07269100
       *07290400* 07295020
START  -- LABEL  -- DECLARED AT 07425500  --  OCCURS AT 07425600
        07427645
START  -- LABEL  -- DECLARED AT 12371000  --  OCCURS AT 12409500
START  -- LABEL  -- DECLARED AT 13019000  --  OCCURS AT 13093000
        13136000
START  -- LABEL  -- DECLARED AT 16914000  --  OCCURS AT 16918000
        16969500
START  -- LABEL  -- DECLARED AT 20146600  --  OCCURS AT 20149600
        20146900  20199600
START  -- LABEL  -- DECLARED AT 24032800  --  OCCURS AT 24036200
        24038200
START  -- LABEL  -- DECLARED AT 37180600  --  OCCURS AT 37222000
        37240050  37241700  37255000
START  -- LABEL  -- DECLARED AT 41430500  --  OCCURS AT 41500100
        41430600
STARTADECK  --  PROCEDURE  --  DECLARED AT 07422000  --  FORWARD AT 07002000
        07420010  07461900  07469000  07573000  44280100
STARTANEWFILE  --  LABEL  --  DECLARED AT 12514000  --  OCCURS AT 12694500
        12515000  12710500
STARTANEWFILE  --  DEFINE  --  DECLARED AT 13026000
        13136000
STARTIMING  --  PROCEDURE  --  DECLARED AT 37271000  --  FORWARD AT 00377000
        04680050  04684700  07073000  07104000  12526500  12675250  12675500  12758000  28012080  28014200  28015400
        28037400  28052800  28071800  28074000  28082600  28084200  28226400  28247400  28248200  28251200  28305200
        28306200  28306800  28434600  28481600  37214000  37218300  37248000  37255000  38015900  38105600  38106100
        38114500  38203600  38204100  38232500  38235500  39238000  39242000  39293300  41212000
STARTING  --  REAL  --  DECLARED AT 12210500
       *12255000* 12277500  12278500 *12282000*
STARTING  --  REAL  --  DECLARED AT 12359500
       *12432000* 12435500 *12436000*
STARTING  --  DEFINE  --  DECLARED AT 20018800
        20023300
STARTING  --  DEFINE  --  DECLARED AT 20087700
STARTING  --  DEFINE  --  DECLARED AT 20147900
        20149400  20150600  20199400
STARTIO  --  PROCEDURE  --  DECLARED AT 04020000  --  FORWARD AT 01165000
        04037000  04377800  04432800  04564000  04671950  22035000  22097000  22213600  22220000  48119000
STARTLOADN  --  PROCEDURE  --  DECLARED AT 07243000
        16536000
STARTLOG  --  DEFINE  --  DECLARED AT 00025300
        02027000  12612000  12819500  20180350  22242100  48080200
STARTOG  --  DEFINE  --  DECLARED AT 00081610
        07427610  07427620  07427640
STARTWRD  --  DEFINE  --  DECLARED AT 05780030
        05844920  05848255  05849500  05850200  05850300  05961000  05961800  05962000  05971800  06109200  06380150
        06380750  06380800  16826800
STATE  --  REAL  --  DECLARED AT 38006000
        38012000  38013400  38038000  38072000
STATE  --  REAL  --  DECLARED AT 38102600
```

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        38111500 *38118500* 38125500
STATE  -- REAL  -- DECLARED AT 38200600
        38211500  38276500
STATE  -- REAL  -- DECLARED AT 38362000
        38389200  38389300  38389800  38392000  38397000  38398000  38411100  38411300 *38503800**38526000*
STATE  -- REAL  -- DECLARED AT 38547000
        38586000 *38642000*
STATE  -- REAL  -- DECLARED AT 38655000
        38681000  38682000  38746000  38749000  38750000  38753000 *38776000**38777000**38780000**38781000**38784000*
       *38790000* 38794000  38798000 *38817000*
STATE  -- REAL  -- DECLARED AT 39004000
        39035000  39037000 *39090000* 39301000  39303000
STATE  -- REAL  -- DECLARED AT 41003000
       *41041000**41187000* 41189000  41194000
STATUANDBUF  -- DEFINE  -- DECLARED AT 08100530
STATUS  -- PROCEDURE  -- DECLARED AT 22055000  -- FORWARD AT 00369000
        22227000  48014000  48084300
STATUSBIT  -- DEFINE  -- DECLARED AT 00080200
        22224000  48012500  48084100
STATUSMASK  -- DEFINE  -- DECLARED AT 00080200
        02196000  07059200  07232000  08046000  08088000  08421000  08580000  12530500  37304000  45150000  48013000
        48084200
STAWORDAREAV  -- DEFINE  -- DECLARED AT 00017460
STFIRST  -- DEFINE  -- DECLARED AT 00134420
        12271500  14431470
STKSZ  -- REAL  -- DECLARED AT 19696100
       *19738210* 19776110
STNEXT  -- DEFINE  -- DECLARED AT 00134440
        12271500  12454000  12454500  12473060  12473070  12473080  14431440  14431450  14431460
STOG  -- REAL  -- DECLARED AT 12507000
        12507500 *12712000**12721000*
STOG  -- REAL  -- DECLARED AT 12807000
        12807500
STOG  -- REAL  -- DECLARED AT 13010000
STOP  -- REAL  -- DECLARED AT 04123000
        04123500 *04159000**04164000* 04189000  04196400  04223000
STOP  -- DEFINE  -- DECLARED AT 06073300
        06114600
STOP  -- SUBROUTINE  -- DECLARED AT 07011000
        07233000  07234000
STOP  -- LABEL  -- DECLARED AT 20020300  -- OCCURS AT 20066400
        20055500  20060800
STOP  -- SUBROUTINE  -- DECLARED AT 22247000
        22299000  22361000  22409000
STOPCK  -- DEFINE  -- DECLARED AT 06073400
        06087000  06090700  06091700  06092000  06096700  06110600
STOPIT  -- LABEL  -- DECLARED AT 06070000  -- OCCURS AT 06114600
        06108100  06108900
STOPLOG  -- DEFINE  -- DECLARED AT 00025500
        02008300  02034000  06190000  12610100  12817600  22252000
STOPLOOP  -- LABEL  -- DECLARED AT 14351250  -- OCCURS AT 14431410
        14431514  14431620  14431630
STOPM  -- PROCEDURE  -- DECLARED AT 17900500  -- FORWARD AT 00089100
        07028000  13107000  17928000  28043200  28046600  28089800  28230600  28260800  28270822  28303400  28885500
        48030000
STOPMIX  -- REAL  -- DECLARED AT 12360000
       *12431000* 12435500 *12439500* 12442500  12449000  12451000  12452000  12453000  12453500  12454000  12457000
```

```
      *12457500* 12458000  12458500  12459000  12461000  12462000  12463000  12464000  12465000  12466000 *12473070*
       12473090  12473100  12473120  12473140  12473150  12473160  12473190  12473200  12473280
STOPMIX  --  STREAM VARIABLE  --  DECLARED AT 12473200
       12473250
STOPMIX  --  REAL  --  DECLARED AT 14351250
      *14431450* 14431480  14431490  14431502  14431506  14431510  14431512  14431518  14431520  14431600
STOPMIX  --  STREAM VARIABLE  --  DECLARED AT 14431520
       14431570
STOPPER  --  DEFINE  --  DECLARED AT 14160000
       14184000  14189000
STOPSET  --  DEFINE  --  DECLARED AT 02110300
       07028000  12473120  13107000  14431502  15114700  28043200  28046600  28089800  28230600  28260800  28270822
       28303400  28885500
STOPSQ  --  LABEL  --  DECLARED AT 06070000  --  OCCURS AT 06113400
       06087000  06090700  06091700  06092000  06096700  06101900  06110600
STOPTEST  --  DEFINE  --  DECLARED AT 00416760
       04654200
STOPTIME  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12757750
       12755500
STOPTIMING  --  DEFINE  --  DECLARED AT 00382000
       04680050  12526500  12758000  28012080  28014200  28015400  28037400  28082600  28226400  28247400  28251200
       28305200  28306200  28306800  28434600  28481600  37214000  37218300  37255000  38105600  38106100  38203600
       38204100  41212000
STOREADDRESS  --  DEFINE  --  DECLARED AT 07003412
       07003504  07003514  07003522  07003530  07003538  07003546  07003554  07003562  07003570
STOREDY  --  DEFINE  --  DECLARED AT 00080500
       12386000  18841400  18844000  20119600  24043000  42476000  44142000
STOREMASK  --  DEFINE  --  DECLARED AT 00080500
       02434480  02434490  02434530  09617000  09624000  12386000  14361000  18841400  18841500  18843700  18844000
       18844100  18845500  20119600  20119700  20120600  24043000  24043100  24043800  42476000
STQUE  --  REAL ARRAY  --  DECLARED AT 00134110
      *12454000* 12473070 *12473080* 14431450 *14431460**17926000* 44163040
STQUEMAX  --  DEFINE  --  DECLARED AT 00134115
       12473060  14431440  17925500  44151052
STR  --  STREAM LABEL  --  DECLARED AT 06079900  --  OCCURS AT 06081600
STR  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 28421600
       28422000
STT  --  LABEL  --  DECLARED AT 02194000  --  OCCURS AT 02262000
       02266400  02272000  02315000
ST1  --  LABEL  --  DECLARED AT 20591500  --  OCCURS AT 20594600
       20593150
ST2  --  LABEL  --  DECLARED AT 20591550  --  OCCURS AT 20593450
       20593800
SU  --  LABEL  --  DECLARED AT 37007000  --  OCCURS AT 37096000
       37008000
SU  --  STREAM VARIABLE  --  DECLARED AT 39905000
      *39912000* 39914000
SU  --  REAL ARRAY  --  DECLARED AT 40005000
       40016200 *40016240* 40016400  40016510  40016920 *40017280* 40027240  40027250  40027270  40027290  40027295
      *40042100* 40047100  40060305 *40072000* 40074000  40076000  40078033  40078074  40078092 *40249100* 40261010
      *40261040* 40261200  40290400  40321310  40321400  40322220  40323600  40323700  40324200  40327000  40335000
SUM  --  REAL  --  DECLARED AT 06068500
      *06110400* 06110800 *06111400*
SUPER  --  LABEL  --  DECLARED AT 07009000  --  OCCURS AT 07129000
       07181000  07230000
SUPER  --  REAL  --  DECLARED AT 40005100
      *40065050**40065100**40078078**40078092* 40292200 *40292212* 40292222 *40292230*
```

```
SUSTATUS  --  PROCEDURE  --  DECLARED AT 39900000  --  FORWARD AT 08438900
        08484500  40356800
SV  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16170000
        16063000
SV  --  STREAM VARIABLE  --  DECLARED AT 20105400
       *20106700*
SV  --  REAL  --  DECLARED AT 28003800
       *28074200* 28074800
SV  --  REAL  --  DECLARED AT 28204200
        28204400 *28246800* 28253000  28272400  28272800 *28278200**28278600* 28279200 *28282600* 28284000
SV  --  STREAM VARIABLE  --  DECLARED AT 28272400
SVALUE  --  REAL  --  DECLARED AT 20014500
SVALUE  --  REAL  --  DECLARED AT 20083700
SVALUE  --  REAL  --  DECLARED AT 20144100
        20151200  20162900  20186800  20187700  20189400
SVDI  --  STREAM VARIABLE  --  DECLARED AT 04659300
       *04660100* 04660400  04660900
SVPBT  --  DEFINE  --  DECLARED AT 00416610
        12528000  38256500
SVSEARCH  --  LABEL  --  DECLARED AT 24032800  --  OCCURS AT 24033200
        24034200  24034700  24034750  24034900  24035100
SVSI  --  STREAM VARIABLE  --  DECLARED AT 04652000
       *04653200* 04653300
SVSTART  --  LABEL  --  DECLARED AT 24032800  --  OCCURS AT 24033100
        24034700  24040000
SW  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04162000
        04133500  04142500
SW  --  SWITCH LABEL  --  DECLARED AT 06351800
        06352000
SW  --  SWITCH LABEL  --  DECLARED AT 12514500
        12621500
SW  --  SWITCH LABEL  --  DECLARED AT 12813500
        12847500
SW  --  SWITCH LABEL  --  DECLARED AT 20146900
        20151500  20163200  20187100  20187900  20189700
SW  --  SWITCH LABEL  --  DECLARED AT 20566620
        20567600
SW  --  SWITCH LABEL  --  DECLARED AT 20591600
        20591650
SW  --  SWITCH LABEL  --  DECLARED AT 20599000
        20606610
SW  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37056000
        37047800
SW  --  SWITCH LABEL  --  DECLARED AT 38662000
        38697000
SW  --  SWITCH LABEL  --  DECLARED AT 41006000
        41052000
SW  --  SWITCH LABEL  --  DECLARED AT 42512000
        42518000
SWIT  --  SWITCH LABEL  --  DECLARED AT 28010000
        28049800
SWITCHIT  --  LABEL  --  DECLARED AT 16914000  --  OCCURS AT 16955800
        16951500
SWITCHREELS  --  DEFINE  --  DECLARED AT 28207650
        28244040
SXIT  --  LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37240200
        37241525  37241610
```

```
SY  --  LABEL  --  DECLARED AT 16700000  --  OCCURS AT 16789000
        16704500
SYL  --  STREAM VARIABLE  --  DECLARED AT 16854700
SYLLABLE  --  INTEGER  --  DECLARED AT 00026000
        00032000  00034000  00035000 *00035500* 00039035 *00039050**00044000*
SYLLABLE  --  REAL  --  DECLARED AT 00310000
        14002000  42523000  42524000  42525000
SYNTA  --  DEFINE  --  DECLARED AT 20237000
        20585700  20585800  20585850  20604700
SYS  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09716000
        09706000
SYS  --  LABEL  --  DECLARED AT 18207000  --  OCCURS AT 18388000
        18219000  18396000
SYSJOBF  --  DEFINE  --  DECLARED AT 00134030
        02261100  04252500  04302200  09608000  12416000  14431425  15113500  16178000  20193400  22042100  37185350
SYSMAX  --  DEFINE  --  DECLARED AT 00310200
        44086300
SYSNO  --  DEFINE  --  DECLARED AT 00310200
        07438100  08438410  08488430  08597810  08597830  08630000  08673000  08832000  08834000  09641000  09680400
        12321120  15501600  15531200  15550000  18017000  18345000  18555000  20289115  28288400  28882200  32000510
        38220500  41320330  41320350  44087000  44202800  44203150  44209200  44213000  44243250
SYSTEMFILE  --  REAL PROCEDURE  --  DECLARED AT 09700000  --  FORWARD AT 00463300
        06093000  20511188  20574750  20577810  20592000  20593650  20729000  28415200  38512000
SZ  --  REAL  --  DECLARED AT 18004000
       *18012000* 18014000  18016000  18018000 *18046000* 18048000  18049000  18050000 *18054000* 18056000  18057000
        18059000  18060000  18062000  18069000  18071000  18073000
SZ  --  REAL  --  DECLARED AT 19694000
      *19760000* 19766300
SZ1  --  STREAM VARIABLE  --  DECLARED AT 12410500
        12412000
SZ2  --  STREAM VARIABLE  --  DECLARED AT 12411000
        12412000
S1  --  REAL  --  DECLARED AT 04126000
        04127000 *04131000* 04132000 *04137170* 04137190 *04178000* 04180000 *04194700* 04195100  04201000  04213000
S1  --  STREAM VARIABLE  --  DECLARED AT 04359400
        04360400
S1  --  REAL  --  DECLARED AT 19694000
       *19744000* 19748000
S2  --  STREAM VARIABLE  --  DECLARED AT 04359400
        04362800
S2  --  REAL  --  DECLARED AT 20017400
        20017500 *20058800* 20059900 *20060500*
T  --  REAL  --  DECLARED AT 00307000
        00308000
T  --  STREAM VARIABLE  --  DECLARED AT 00308000
T  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00316100
T  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00480010
T  --  REAL  --  DECLARED AT 00650250
        00651000
T  --  STREAM VARIABLE  --  DECLARED AT 01260600
        01260700
T  --  REAL  --  DECLARED AT 02057000
        *02064000* 02067000 *02077000* 02081000  02097000  02097400
T  --  REAL  --  DECLARED AT 02116000
        *02123000* 02125000  02126000
T  --  INTEGER  --  DECLARED AT 02133200
        *02173110* 02173210  02173286  02173350
```

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T  --  REAL  --  DECLARED AT 02190000
       *02212000**02214000* 02215000 *02215500* 02216000  02216010 *02216100* 02216600  02217000 *02217100* 02221000
       *02262000* 02263000 *02264000**02274000**02287240**02287245**02287250**02287260* 02287270 *02293000* 02294000
       *02303000* 02306000 *02308000* 02309000  02310000  02313000 *02318000* 02319000 *02320000**02322000* 02323000
       *02324000**02328100* 02328200
T  --  STREAM VARIABLE  --  DECLARED AT 02221000
        02228000  02231000 *02251080* 02251090 *02251140* 02251150
T  --  REAL  --  DECLARED AT 02347220
       *02347320* 02347325  02347335  02347350  02347430
T  --  INTEGER  --  DECLARED AT 02362000
       *02365000* 02366000  02368000 *02371000* 02375000
T  --  REAL  --  DECLARED AT 02661000
        02664000  02668500
T  --  STREAM VARIABLE  --  DECLARED AT 02664000
        02664100
T  --  REAL  --  DECLARED AT 04021000
       *04022000* 04023000  04032000
T  --  REAL  --  DECLARED AT 04044000
       *04048800**04055000* 04057000 *04058000* 04059000  04062000
T  --  REAL  --  DECLARED AT 04068000
       *04073000* 04075000 *04085000* 04086000 *04090000* 04091000
T  --  NAME  --  DECLARED AT 04100000
       *04104000* 04105800  04107000  04109000
T  --  STREAM VARIABLE  --  DECLARED AT 04109000
        04110000
T  --  REAL  --  DECLARED AT 04126000
       *04129000* 04130000 *04142000**04152400* 04154000 *04160000* 04162000 *04164000**04182000**04192000* 04196600
        04201000
T  --  REAL  --  DECLARED AT 04243100
       *04251100* 04251300  04252000  04252700  04253000
T  --  STREAM VARIABLE  --  DECLARED AT 04251300
T  --  REAL  --  DECLARED AT 04257400
T  --  REAL  --  DECLARED AT 04354000
       *04371930* 04371950 *04372400* 04372800  04373200  04377600 *04419600**04421600* 04421900  04422000 *04424600*
        04425200 *04426600* 04432200
T  --  STREAM VARIABLE  --  DECLARED AT 04567320
T  --  STREAM VARIABLE  --  DECLARED AT 04567790
T  --  STREAM VARIABLE  --  DECLARED AT 04644000
T  --  STREAM VARIABLE  --  DECLARED AT 04647100
       *04647400*
T  --  STREAM VARIABLE  --  DECLARED AT 04651900
       *04653700*
T  --  STREAM VARIABLE  --  DECLARED AT 04672500
T  --  STREAM VARIABLE  --  DECLARED AT 04672950
T  --  STREAM VARIABLE  --  DECLARED AT 04674750
T  --  STREAM VARIABLE  --  DECLARED AT 04675000
T  --  STREAM VARIABLE  --  DECLARED AT 04683500
T  --  STREAM VARIABLE  --  DECLARED AT 04686100
T  --  STREAM VARIABLE  --  DECLARED AT 04686950
T  --  REAL  --  DECLARED AT 04704000
       *04707000* 04709000  04710000  04712000  04722000  04731000  04737000  04742000
T  --  STREAM VARIABLE  --  DECLARED AT 04709000
T  --  STREAM VARIABLE  --  DECLARED AT 04712000
        04717000  04718000
T  --  STREAM VARIABLE  --  DECLARED AT 04737000
T  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05607000
       *05609000* 05610000 *05611000* 05612000 *05613000* 05614000
```

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T  --  STREAM VARIABLE  --  DECLARED AT 05614000
        05615000
T  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05839400
        05842200  05842475  05843000  05843500 *05844920* 05845700
T  --  INTEGER  --  DECLARED AT 05847700
       *05850300**05850400**05850500* 05850600 *05851300* 05851500  05851900  05852000 *05852100**05852200*
T  --  INTEGER  --  DECLARED AT 05952000
        05952715  05952755 *05962000**05962200**05962400* 05962600  05962800 *05972000* 05972400  05972600  05972800
        05973600  05973800
T  --  STREAM VARIABLE  --  DECLARED AT 05952715
        05952725
T  --  STREAM VARIABLE  --  DECLARED AT 05952755
       *05952915**05952930*
T  --  REAL  --  DECLARED AT 06022000
       *06022300* 06022500  06023000
T  --  STREAM VARIABLE  --  DECLARED AT 06023000
       *06029000*
T  --  REAL  --  DECLARED AT 06037000
       *06037700* 06038100
T  --  STREAM VARIABLE  --  DECLARED AT 06038100
T  --  REAL  --  DECLARED AT 06064000
        06065000  06066000
T  --  REAL  --  DECLARED AT 06068500
        06068600  06098400  06098600
T  --  REAL  --  DECLARED AT 06185000
       *06203650* 06203700 *06206140* 06206240 *06208000* 06210000  06214000  06215000  06254000  06257000
T  --  STREAM VARIABLE  --  DECLARED AT 06206140
T  --  INTEGER  --  DECLARED AT 06405000
       *06411000* 06412000  06413000  06416000  06421000  06422000  06423000
T  --  REAL  --  DECLARED AT 07006050
        07018000  07019000 *07051110* 07051130  07051140 *07062000* 07065000 *07067000**07077000**07090000* 07093000
        07120000 *07125000**07128000**07139530* 07139565  07145000  07146000  07148000  07149000 *07155000* 07156000
        07176000  07177000 *07214000* 07214100  07219000 *07224000* 07226000 *07227000**07233000**07234000*
T  --  STREAM VARIABLE  --  DECLARED AT 07139530
T  --  STREAM VARIABLE  --  DECLARED AT 07156000
T  --  STREAM VARIABLE  --  DECLARED AT 07214100
T  --  REAL  --  DECLARED AT 07244000
       *07252000* 07255000  07262400  07263700  07264000  07264200
T  --  STREAM VARIABLE  --  DECLARED AT 07262400
T  --  REAL  --  DECLARED AT 07269000
        07284000
T  --  STREAM VARIABLE  --  DECLARED AT 07284000
T  --  REAL  --  DECLARED AT 07299000
       *07343000* 07344000
T  --  REAL  --  DECLARED AT 07408100
       *07418000* 07419200  07419300
T  --  REAL  --  DECLARED AT 07424000
       *07444000**07445100* 07445200  07445300 *07446000* 07446100 *07446150* 07447000  07448500  07449000
T  --  REAL  --  DECLARED AT 07542000
       *07545000* 07559000
T  --  REAL  --  DECLARED AT 08027000
        08029015  08033980 *08033990* 08033992 *08033994* 08034000  08051000  08051010  08051065
T  --  STREAM VARIABLE  --  DECLARED AT 08029015
T  --  REAL  --  DECLARED AT 08099650
       *08101520* 08101950  08102150  08102300  08102350  08103650  08103700 *08106800* 08107100 *08107600* 08108250
       *08108800* 08109300 *08109750* 08110350 *08111350* 08112200 *08113000* 08113300 *08113750* 08114650 *08114900*
        08115450
```

```
T  --  STREAM VARIABLE  --  DECLARED AT 08107100
T  --  STREAM VARIABLE  --  DECLARED AT 08108250
T  --  STREAM VARIABLE  --  DECLARED AT 08109300
T  --  STREAM VARIABLE  --  DECLARED AT 08110350
T  --  STREAM VARIABLE  --  DECLARED AT 08112200
T  --  STREAM VARIABLE  --  DECLARED AT 08113300
T  --  STREAM VARIABLE  --  DECLARED AT 08114650
T  --  STREAM VARIABLE  --  DECLARED AT 08115450
T  --  REAL  --  DECLARED AT 08172000
       *08174000* 08175200  08175400  08175500  08176000  08178000
T  --  REAL  --  DECLARED AT 08344000
T  --  REAL  --  DECLARED AT 08377000
        08384000  08386000
T  --  REAL  --  DECLARED AT 08391000
       *08396000* 08397000  08409000  08410200
T  --  STREAM VARIABLE  --  DECLARED AT 08397000
T  --  REAL  --  DECLARED AT 08440000
       *08447000* 08448000  08449000  08451000  08454000  08471010  08472000
T  --  STREAM VARIABLE  --  DECLARED AT 08472000
T  --  INTEGER  --  DECLARED AT 08528000
       *08530000* 08531000 *08533400**08533700**08534000**08535000**08536000**08537000**08538000* 08540000
T  --  STREAM VARIABLE  --  DECLARED AT 08540000
        08541000
T  --  REAL  --  DECLARED AT 08576000
       *08577700* 08578100  08590000  08597000 *08597800* 08597810  08597820  08597830  08597840
T  --  STREAM VARIABLE  --  DECLARED AT 08578100
T  --  STREAM VARIABLE  --  DECLARED AT 08590000
T  --  STREAM VARIABLE  --  DECLARED AT 08605000
       *08613000* 08618000  08619500
T  --  REAL  --  DECLARED AT 08626000
        08630000  08632000  08670000
T  --  STREAM VARIABLE  --  DECLARED AT 08632000
       *08638000* 08643000  08650000  08653000 *08655000*
T  --  STREAM VARIABLE  --  DECLARED AT 08690100
        08690130  08690190  08690250  08690280 *08690300*
T  --  REAL  --  DECLARED AT 08704000
        08728000
T  --  INTEGER  --  DECLARED AT 08733000
       *08775000* 08784000  08784100
T  --  STREAM VARIABLE  --  DECLARED AT 08775000
T  --  REAL  --  DECLARED AT 08801000
T  --  REAL  --  DECLARED AT 08851000
       *08882500* 08916000
T  --  STREAM VARIABLE  --  DECLARED AT 08916000
        08917000 *08919000**08922000*
T  --  REAL  --  DECLARED AT 09501000
       *09505000* 09505500  09505600  09505700  09505750 *09507500* 09508000 *09510000**09535000* 09535100  09536000
T  --  REAL  --  DECLARED AT 09602000
        09602100 *09631000* 09632000 *09639000* 09640000  09641000  09646000  09648800
T  --  REAL  --  DECLARED AT 09679300
       *09679800* 09679900 *09680800* 09681000  09681505  09681515  09681540  09681900  09682000  09682200
T  --  STREAM VARIABLE  --  DECLARED AT 09681000
T  --  STREAM VARIABLE  --  DECLARED AT 09681515
T  --  STREAM VARIABLE  --  DECLARED AT 09682200
T  --  DEFINE  --  DECLARED AT 09702000
        09703000  09704000  09704100  09704500  09705000  09706000  09706050  09706100  09707000  09708000
T  --  STREAM VARIABLE  --  DECLARED AT 12225500
```

```
        *12237000* 12238000 *12241500*
T  --   REAL  --  DECLARED AT 12503500
        *12535500**12537000**12537500* 12538500 *12549500**12550000* 12550500 *12556000* 12556500 *12590000* 12590500
         12626500  12627000 *12628000**12639500* 12641000 *12643000* 12643500  12645000  12647000 *12647500* 12648000
         12650500 *12655000* 12656000  12657000  12691500  12705750 *12708250* 12709500 *12709750* 12710250
T  --   STREAM VARIABLE  --  DECLARED AT 12708250
T  --   REAL  --  DECLARED AT 12803500
        *12823000* 12829000 *12830000**12833000* 12836000  12862000 *12863500* 12864500 *12865500* 12866000  12866500
         12873500  12874500  12875000  12875500  12876500  12880500  12887000 *12892500* 12897500  12898000 *12901000*
T  --   STREAM VARIABLE  --  DECLARED AT 12833000
T  --   STREAM VARIABLE  --  DECLARED AT 12880500
         12882000
T  --   STREAM VARIABLE  --  DECLARED AT 12887000
        *12888000*
T  --   STREAM VARIABLE  --  DECLARED AT 12892500
T  --   REAL  --  DECLARED AT 13004000
         13054000  13064000 *13108000* 13110000 *13135000*
T  --   INTEGER  --  DECLARED AT 14108000
        *14113000**14117000*
T  --   STREAM VARIABLE  --  DECLARED AT 14186100
         14186110
T  --   STREAM VARIABLE  --  DECLARED AT 14204100
T  --   STREAM VARIABLE  --  DECLARED AT 14205300
T  --   STREAM VARIABLE  --  DECLARED AT 14227300
         14227520 *14227560* 14227600
T  --   STREAM VARIABLE  --  DECLARED AT 14284000
         14285000  14287000
T  --   REAL  --  DECLARED AT 14348000
        *14351310* 14351320  14351330  14351350  14351360  14351370 *14351390* 14351400 *14351410* 14351420  14351440
        *14358595**14358598* 14358600 *14362000* 14364100  14364200  14364300  14364800  14381000  14383000 *14383700*
         14383800  14384000  14388000  14390000  14392000  14393000  14398700  14398800  14399300  14399400 *14415200*
         14430400
T  --   STREAM VARIABLE  --  DECLARED AT 14415200
T  --   REAL  --  DECLARED AT 14532000
        *14533000* 14534000  14535000 *14540350* 14541100
T  --   REAL  --  DECLARED AT 14545000
        *14550500**14554500**14557500**14590000* 14592000 *14595000**14598200* 14600500 *14601500* 14603320  14604000
         14607000  14619000
T  --   REAL  --  DECLARED AT 14624450
        *14640000**14642000**14643000* 14645000  14691000  14711000
T  --   STREAM VARIABLE  --  DECLARED AT 14645000
T  --   STREAM VARIABLE  --  DECLARED AT 14691000
         14693000
T  --   STREAM VARIABLE  --  DECLARED AT 14711000
         14712000
T  --   REAL  --  DECLARED AT 15020000
        *15022000* 15039000  15040000
T  --   REAL  --  DECLARED AT 15066000
        *15098000* 15099000
T  --   STREAM VARIABLE  --  DECLARED AT 15113800
T  --   STREAM VARIABLE  --  DECLARED AT 15115700
T  --   REAL  --  DECLARED AT 15171000
        *15174000**15180000* 15182000
T  --   STREAM VARIABLE  --  DECLARED AT 16343500
T  --   STREAM VARIABLE  --  DECLARED AT 16689100
T  --   STREAM VARIABLE  --  DECLARED AT 16854600
        *16855600**16855800*
```

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T  --  STREAM VARIABLE  --  DECLARED AT 16902600
T  --  INTEGER  --  DECLARED AT 16912100
       *16926210* 16967000  16968100 *16968120*
T  --  STREAM VARIABLE  --  DECLARED AT 16926210
T  --  STREAM VARIABLE  --  DECLARED AT 16967000
T  --  REAL  --  DECLARED AT 17000800
       *17003450* 17005400
T  --  STREAM VARIABLE  --  DECLARED AT 17003450
T  --  REAL  --  DECLARED AT 18004000
       *18025000* 18028000  18030000 *18050000* 18053000  18054000  18056000 *18057000*
T  --  REAL  --  DECLARED AT 18198000
       *18438120* 18438180  18438200
T  --  STREAM VARIABLE  --  DECLARED AT 18438120
T  --  REAL  --  DECLARED AT 18502300
       *18520600* 18521000  18522700 *18524100* 18524200 *18525700* 18525900 *18527600**18528200* 18529100 *18540500*
        18540600  18541100 *18553400* 18553410  18553500  18553600  18553700  18553800  18554000  18554700  18554800
        18555200 *18555600**18555700* 18555900  18556000  18556200  18556400  18556500  18556800 *18570100* 18570800
T  --  STREAM VARIABLE  --  DECLARED AT 18521000
        18521300
T  --  STREAM VARIABLE  --  DECLARED AT 18528200
T  --  STREAM VARIABLE  --  DECLARED AT 18540600
        18540700
T  --  STREAM VARIABLE  --  DECLARED AT 18570100
T  --  REAL  --  DECLARED AT 18701800
       *18720200* 18720300 *18720400* 18720600  18720800 *18770900* 18790600 *18830600* 18830900  18834200  18834700
        18835300  18835600 *18840200* 18840300  18840400 *18840500**18841600**18844200* 18844400  18844500  18844600
        18845200  18845300  18845400
T  --  STREAM VARIABLE  --  DECLARED AT 18790600
T  --  STREAM VARIABLE  --  DECLARED AT 18830900
T  --  STREAM VARIABLE  --  DECLARED AT 18834200
T  --  STREAM VARIABLE  --  DECLARED AT 18834700
T  --  REAL  --  DECLARED AT 19519000
       *19576100**19576200**19576300**19576400**19576500* 19576600 *19590000* 19592000 *19680200* 19680500
T  --  STREAM VARIABLE  --  DECLARED AT 19680200
T  --  REAL  --  DECLARED AT 19693000
       *19698000* 19699000  19700500  19703000  19707000  19711300  19711400  19720000  19732000  19733400  19733600
        19750000  19765000  19766800  19768200 *19768764* 19768782 *19774100* 19774750
T  --  STREAM VARIABLE  --  DECLARED AT 19768200
T  --  REAL  --  DECLARED AT 19900260
       *19900600**19900610* 19900620 *19900730* 19900735  19900755  19900805 *19900815* 19900820  19900830
T  --  REAL  --  DECLARED AT 19901500
       *19902150**19902200* 19902300 *19902900* 19903100 *19903810* 19903825 *19903830* 19903850  19904360  19905200
T  --  REAL  --  DECLARED AT 20012000
       *20034500* 20035800  20036100  20036200 *20045900* 20046000  20046200  20046300 *20046400**20063300* 20063500
T  --  REAL  --  DECLARED AT 20081200
       *20101300* 20102000 *20118900* 20119000  20121200  20121800  20122100 *20124900* 20125000
T  --  STREAM VARIABLE  --  DECLARED AT 20101300
T  --  REAL  --  DECLARED AT 20141600
       *20163600* 20163700 *20163800* 20165300  20170600  20176105  20178900  20194400
T  --  STREAM VARIABLE  --  DECLARED AT 20194400
        20194600
T  --  REAL  --  DECLARED AT 20289035
       *20289340* 20289360  20289380  20289560
T  --  REAL  --  DECLARED AT 20294000
       *20296200**20298100* 20299020  20300000
T  --  STREAM VARIABLE  --  DECLARED AT 20300000
        20301000  20301500
```

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T  --  REAL  --  DECLARED AT 20382050
       *20382068* 20382070  20382072 *20382165* 20382170  20382280
T  --  STREAM VARIABLE  --  DECLARED AT 20427000
T  --  STREAM VARIABLE  --  DECLARED AT 20433000
T  --  STREAM VARIABLE  --  DECLARED AT 20439000
T  --  STREAM VARIABLE  --  DECLARED AT 20484300
        20484400
T  --  REAL  --  DECLARED AT 20511155
        20511660  20511662  20511664  20511665
T  --  REAL  --  DECLARED AT 20566100
        20566807  20566822  20567260  20567600  20569528  20569529  20569590  20569610  20569810  20569840  20570120
        20570280  20570290 *20573850**20574750* 20574900  20574905 *20574910* 20574917 *20574920* 20574950  20575000
        20575150  20575250  20575350  20575400  20575800  20576200  20576210  20576450 *20576900**20577000* 20577025
        20577150  20577250 *20577675* 20577725 *20577810* 20577820  20577823 *20577826* 20577828 *20577829* 20577835
        20577875  20577950  20578025  20578075  20578175  20578210  20578300 *20578375* 20578425
T  --  REAL  --  DECLARED AT 20581000
        20581200 *20583700*
T  --  REAL  --  DECLARED AT 20584000
       *20584350**20584450**20584500**20585360* 20585365  20585380  20585385
T  --  REAL  --  DECLARED AT 20586800
       *20587200**20587800* 20588000  20588010  20588100  20588200  20588400  20588450  20588550 *20588650**20588700*
       *20588702**20588740**20588747* 20588750 *20589250* 20589300
T  --  REAL  --  DECLARED AT 20589800
       *20590050**20590100**20590150* 20590200  20590300  20590400  20590450  20590550  20590600  20590668  20590688
        20590710
T  --  REAL  --  DECLARED AT 20591000
        20593060 *20593100* 20593750  20593900 *20594450* 20594600
T  --  REAL  --  DECLARED AT 20595000
        20595850
T  --  REAL  --  DECLARED AT 20596800
        20596950  20597000  20597050
T  --  REAL  --  DECLARED AT 20600010
        20600130 *20601720* 20601740  20601760 *20602700* 20602800  20603000  20603565  20603600 *20604115**20604250*
        20604300  20604350  20604500  20604850 *20605000* 20605050 *20605360**20605380**20605400**20605405**20605430*
        20605435 *20605460**20605465**20605470* 20605480 *20605700**20605702**20605880**20607060* 20607600  20608000
        20608050 *20608074* 20608078 *20608114* 20608116 *20608730**20608740**20608770*
T  --  REAL  --  DECLARED AT 20701500
        20704220  20704230  20704240  20704250  20704260 *20722000**20730000**20731000* 20736000  20738000 *20739000*
        20741000  20742000  20746000  20748000  20749000  20750000  20751000  20753000  20756000  20758000  20769600
        20771100
T  --  REAL  --  DECLARED AT 22057000
        22058000 *22074000* 22075000  22078000 *22107000* 22111500  22115030  22118000  22119000  22128000  22129000
        22136000  22145000  22145050  22145500  22145550  22147000  22159000  22178000  22181000  22185000 *22203000*
        22205000
T  --  STREAM VARIABLE  --  DECLARED AT 22115030
        22115040
T  --  STREAM VARIABLE  --  DECLARED AT 22119000
        22120000
T  --  STREAM VARIABLE  --  DECLARED AT 22129000
        22130000
T  --  STREAM VARIABLE  --  DECLARED AT 22159000
        22160000
T  --  REAL  --  DECLARED AT 22231000
       *22307000**22309000**22314000* 22315000 *22354000**22356200**22356300**22363000**22365200**22365300**22390000*
        22393000 *22395000* 22397000 *22410000* 22416000
T  --  STREAM VARIABLE  --  DECLARED AT 22416000
        22417000
```

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T  --  REAL  --  DECLARED AT 22902000
T  --  REAL  --  DECLARED AT 24004000
       *24011000* 24012000 *24017000* 24018000  24019000 *24024000* 24026000  24027000
T  --  REAL  --  DECLARED AT 24032200
       *24033600**24033800* 24034400 *24035100* 24035300  24036400  24038900  24039000  24039100  24039300  24039500
        24039700
T  --  REAL  --  DECLARED AT 24042550
       *24043600* 24043900  24045500
T  --  REAL  --  DECLARED AT 24110000
        24116000 *24126000* 24127000  24128000  24134000  24143000  24158000
T  --  STREAM VARIABLE  --  DECLARED AT 24116000
        24117000
T  --  STREAM VARIABLE  --  DECLARED AT 24134000
        24135000 *24137000* 24139000
T  --  STREAM VARIABLE  --  DECLARED AT 24158000
        24159000
T  --  REAL  --  DECLARED AT 28001600
        28001800 *28018000* 28018400 *28023800**28024600**28024800* 28025000  28026800  28031000  28032000 *28056400*
        28057400 *28058600* 28062000  28062200  28062400
T  --  STREAM VARIABLE  --  DECLARED AT 28018000
T  --  STREAM VARIABLE  --  DECLARED AT 28023800
T  --  STREAM VARIABLE  --  DECLARED AT 28031000
T  --  STREAM VARIABLE  --  DECLARED AT 28056400
T  --  REAL  --  DECLARED AT 28202000
        28202200 *28213400**28218400**28219200**28219400* 28219600  28221400 *28263400* 28264600 *28267400* 28268000
       *28275800**28281550**28281600* 28282200  28282600  28283000  28283200  28283600 *28283800* 28284800 *28285000*
        28285600  28285800  28286200  28286400  28286800 *28287200* 28287600 *28288000* 28288200  28288400  28288800
        28289000  28295600  28298600  28302000 *28304510* 28304530
T  --  STREAM VARIABLE  --  DECLARED AT 28213400
T  --  STREAM VARIABLE  --  DECLARED AT 28218400
T  --  STREAM VARIABLE  --  DECLARED AT 28263400
T  --  STREAM VARIABLE  --  DECLARED AT 28267400
T  --  STREAM VARIABLE  --  DECLARED AT 28304510
T  --  REAL  --  DECLARED AT 28401000
       *28415400* 28415800  28416200  28416600  28418400  28418800  28419400 *28420200* 28420600  28431000 *28459000*
       *28460000* 28460400  28460600  28460800  28461600  28461800 *28462800* 28463600  28463800 *28470000**28474000*
       *28478400*
T  --  STREAM VARIABLE  --  DECLARED AT 28418400
        28418600
T  --  REAL  --  DECLARED AT 28803000
       *28832500*
T  --  REAL  --  DECLARED AT 32000200
       *32000500* 32000510  32000600 *32000650**32000800**32001475* 32001700
T  --  STREAM VARIABLE  --  DECLARED AT 32001700
T  --  REAL  --  DECLARED AT 32100100
       *32100350* 32100400 *32100500* 32100600
T  --  STREAM VARIABLE  --  DECLARED AT 32100500
T  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 36001000
        36007000  36008000
T  --  STREAM VARIABLE  --  DECLARED AT 37046194
T  --  STREAM VARIABLE  --  DECLARED AT 37284130
T  --  REAL  --  DECLARED AT 37287500
       *37289000* 37290000 *37291800**37294000* 37295000 *37297000* 37298000
T  --  STREAM VARIABLE  --  DECLARED AT 37314200
        37316200
T  --  REAL  --  DECLARED AT 37388200
        37395000 *37404000* 37412000  37413000
```

```
T  --  STREAM VARIABLE  --  DECLARED AT 37395000
        37397000
T  --  REAL ARRAY  --  DECLARED AT 37422000
       *37429000* 37430000  37431000  37432000  37433000 *37434000**37437000**37437500**37440000* 37441000 *37441500*
       *37442000**37443000**37444000**37446000* 37447000
T  --  STREAM VARIABLE  --  DECLARED AT 37441000
T  --  REAL  --  DECLARED AT 37507000
       *37522000* 37526000 *37527000*
T  --  STREAM VARIABLE  --  DECLARED AT 38083000
        38085000
T  --  REAL  --  DECLARED AT 38366010
       *38377400**38378000* 38422000  38424000
T  --  REAL  --  DECLARED AT 38561000
       *38597000* 38598000  38599000  38600000  38602000  38603000  38607000  38607100  38607200  38607900  38607950
        38608000 *38623000* 38624000
T  --  STREAM VARIABLE  --  DECLARED AT 38603000
        38605000
T  --  REAL  --  DECLARED AT 38658000
       *38702000* 38704000 *38705000* 38707000 *38753000* 38754000  38755000 *38759000* 38760000  38767000 *38768000*
        38769000
T  --  REAL  --  DECLARED AT 40004000
        40008340 *40280000* 40281000  40282000  40292212  40293030  40293060  40309100  40309150  40317210  40317220
T  --  STREAM VARIABLE  --  DECLARED AT 40292212
T  --  REAL  --  DECLARED AT 41017000
        41017100 *41191200* 41191300 *41195000* 41198000  41199000 *41200000**41208000* 41209000
T  --  REAL  --  DECLARED AT 44011000
        44080000 *44126000**44154200**44156000**44156100**44157000**44157100**44157200**44158000**44159000**44160000*
       *44160050**44160400**44160500**44162000**44162050**44162100**44163000**44163020**44163030**44163040**44164010*
       *44164020**44164500**44164600**44165700**44166000**44167000**44168000**44168200**44169000**44170000**44171000*
       *44172000**44173000**44175000**44176000**44177000**44178100**44179000**44179050**44179100* 44203200
T  --  STREAM VARIABLE  --  DECLARED AT 44203200
T  --  REAL  --  DECLARED AT 44206700
       *44209200* 44209300  44209400  44209500 *44214200* 44214300  44214400 *44215000**44240690* 44240695 *44243750*
        44244000  44244500  44248000  44248500 *44250500* 44252000 *44254100**44255500* 44256500 *44262000* 44262500
        44263000  44264000 *44270000* 44270500  44271500 *44274500* 44275500
T  --  REAL  --  DECLARED AT 44442000
T  --  REAL  --  DECLARED AT 45002000
       *45094800**45135040* 45135080
T  --  STREAM VARIABLE  --  DECLARED AT 45135040
TA  --  REAL  --  DECLARED AT 02434120
       *02434430* 02434580
TABCNT  --  DEFINE  --  DECLARED AT 00138100
        06203600  06203700  16118200  16206100  16343950  16689450  16902950  16956000
TABLE  --  STREAM VARIABLE  --  DECLARED AT 07003462
        07003466  07003500
TABLE  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 07003610
        07003615  07003920
TABLEOFCONTENTS  --  PROCEDURE  --  DECLARED AT 07268000
        16786500
TADPOLE  --  STREAM LABEL  --  DECLARED AT 04662000  --  OCCURS AT 04662200
TANK  --  REAL ARRAY  --  DECLARED AT 04668800
       *04674450* 04674650  04677300  04682700 *04682750*
TANK  --  REAL  --  DECLARED AT 14624100
        14644000  14645400  14645600  14675000 *14681000* 14689000  14691000 *14698000* 14701000  14702000  14702025
        14702600  14705000  14708000 *14710000* 14711000  14712100  14712200  14712300  14712400
TANK  --  STREAM VARIABLE  --  DECLARED AT 14691000
        14692000
```

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TAPE  --  LABEL  --  DECLARED AT 04357800  --  OCCURS AT 04412200
        04358400
TAPE  --  DEFINE  --  DECLARED AT 20243000
        20461900  20476000
TAPE  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22106000
        22065000
TAPEBUFFERSIZE  --  DEFINE  --  DECLARED AT 04121850
        04421400  04555150  04555250  04555350
TAPECHK  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13081000
        13037000
TAPECL  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12756400
        12694800  02434410 *02657000* 07091000  28072800
TAPEND  --  LABEL  --  DECLARED AT 12513000  --  FORWARD AT 12742500  --  OCCURS AT 12742500
        12706750
TAPEPAR  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28081200
        28010200  28092200
TAPEPARITYRETRY  --  REAL PROCEDURE  --  DECLARED AT 04548000  --  FORWARD AT 04254000
        04421600 *04648150**04651000* 04666000
TAPEPURGE  --  PROCEDURE  --  DECLARED AT 08024000
        16770500
TAPERD  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13062000
        13068000
TAPERDR  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13061000
        13070000
TAPERETRY  --  LABEL  --  DECLARED AT 04357400  --  OCCURS AT 04421200
        04424000
TAR  --  REAL ARRAY  --  DECLARED AT 00079100
        02202100 *02202200**02202500**02434490**02434530**05842300**05846395**05849300**05853600**05960700**05970500*
       *05975610**06103500**06103700**06116000**06116100**06353500**06463992**07001640**07001840**07272500**07296000*
       *07301000**07352000**07371300**07371600**07371950**07426000**07427625**07455000**07562000**07568000**07572000*
       *08259575**08268000**08270650**08379000**08388000**08571100**08571600**08628000**08677000**08689300**08696100*
       *08830000**08836000**08880000**08997000**09617000**09624000**09638000**09647000**09680100**09682620**14379000*
       *14396000**14560000**14569000**14588100**14618000**18023000**18033000**18273000**18425200**18425400**18466000*
       *18841500**18843700**18844100**18845500**19768800**19786000**20035000**20119700**20120600**20150900**20210300*
       *20582450**20583650**20760000**20769200**20771020**22010000**22030000**22906000**22920000**24043100**24043800*
       *24044250**24045250**40336000**41320320**41320355**44148200* 44160050
TBBL  --  STREAM VARIABLE  --  DECLARED AT 16041200
        16041400 *16042300* 16042650  16042700
TBL  --  INTEGER  --  DECLARED AT 41430300
       *41500200**41500300**41500400**41500600* 41500700 *41501700**41502000**41502400*
TBLADDR  --  REAL  --  DECLARED AT 16035100
       *16041100* 16043550
TBLCNT  --  INTEGER  --  DECLARED AT 41430300
       *41501800* 41502100  41502300
TBLERR  --  LABEL  --  DECLARED AT 16914000  --  OCCURS AT 16961500
        16926500
TBL1  --  STREAM VARIABLE  --  DECLARED AT 17003250
        17003800
TD  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18710800
        18701200
TE  --  LABEL  --  DECLARED AT 18701010  --  OCCURS AT 18710268
        18701200
TECH  --  DEFINE  --  DECLARED AT 38385400
        38389200  38389800
TELLSPO  --  SUBROUTINE  --  DECLARED AT 24042625
        24044130  24044400  24045600
TEMP  --  STREAM VARIABLE  --  DECLARED AT 04652000
```

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        04652400  04653600
TEMP  -- STREAM VARIABLE  --  DECLARED AT 04659300
        *04661200* 04661300
TEMP  --  REAL  --  DECLARED AT 04668600
        *04676700* 04676800 *04677050* 04677150 *04678200**04678600**04682150* 04682250  04682350  04682850  04682900
        *04686450* 04686550  04686600 *04686700* 04687200
TEMP  --  REAL  --  DECLARED AT 08441050
        *08447100* 08448050  08451100  08454000
TEMP  --  STREAM VARIABLE  --  DECLARED AT 08454000
        08454500
TEMP  --  INTEGER  --  DECLARED AT 08801000
        *08838000**08839000*
TEMP  --  REAL  --  DECLARED AT 18198000
        *18241000* 18255000 *18255200* 18260000 *18261000* 18265000 *18266000**18273055**18276500**18295000**18425700*
        18460000  18465000  18467000
TEMP  --  REAL  --  DECLARED AT 20581080
        *20583050*
TEMP  --  REAL  --  DECLARED AT 28001000
        28001200 *28013000* 28013200  28013400 *28015000* 28015200 *28049600* 28049800  28052000 *28077400* 28086000
TEMP  --  REAL  --  DECLARED AT 28201400
        28201600 *28250400* 28251000 *28291000* 28291400  28293000 *28293200* 28294000 *28305800* 28306000
TEMP  --  STREAM VARIABLE  --  DECLARED AT 28291400
TEMP  --  REAL  --  DECLARED AT 28400600
        *28429400* 28429600 *28436000* 28436400  28436600  28437000 *28437200* 28437800  28452400  28452600  28452800
        28453000  28454400
TEMP  --  REAL  --  DECLARED AT 42482000
        *42489000* 42490000  42490100  42491000  42492000  42501000  42501900
TEMPDSK  --  DEFINE  --  DECLARED AT 06073600
        06100200
TERMFLAG  --  REAL  --  DECLARED AT 12506000
       *12705250* 12741500  12750500  12753000
TERMGO  --  DEFINE  --  DECLARED AT 00408000
        02257000
TERMGOING  --  DEFINE  --  DECLARED AT 02110250
        22303200  48031000
TERMINALCLOCK  --  REAL  --  DECLARED AT 02179000
       *02185900* 22039000  22040000 *22048200*
TERMINALMESSAGA  --  PROCEDURE  --  DECLARED AT 02188000
        02330400
TERMINALMESSAGE  --  PROCEDURE  --  DECLARED AT 02330100  --  FORWARD AT 00463200
        04105600  04253000  08728700  14233200  14658000  18510100  18552500  18559200  18822100  18835300  19525200
        19680500  37382000  38079500  42488300  42524100  42540000  42551000  48031100  48136000  48143500
TERMINATE  --  PROCEDURE  --  DECLARED AT 02180000  --  FORWARD AT 00463100
        04105600  04252300  04300600  04352600  06360516  06411010  06463260  08728600  14233100  14279250  14358383
        14559500  14581700  14658000  16124000  18510100  18540120  18552400  18559100  18581400  18822100  18835200
        19525200  19680400  19697400  19796000  19904350  20195500  22024000  22025000  36006500  37046735  37225800
        37382000  37394700  38079000  42488200  42501400  42524100  42540000  42551000  48135000  48142500
TERMNATE  --  REAL  --  DECLARED AT 04260000
        04352600
TERMSET  --  DEFINE  --  DECLARED AT 02110100
        04626000  04678350  06360540  06360550  06463300  06463340  07028100  12545000  12649000  12699500  12705250
        12710000  12710500  12861500  12878000  12880500  12900000  12901000  13108000  14193100  14193200  14203100
        14243000  14292150  14582000  14583000  15113300  15115000  17906250  17915000  18029000  18034000  18503300
        18540200  18540300  18580410  19799070  19900670  19903820  19903860  28022200  28036200  28041600  28043000
        28046400  28061800  28085800  28086200  28089600  28095600  28096800  28097200  28216800  28225200  28230400
        28232800  28242000  28242200  28258700  28270824  28285400  28293800  28295800  28303200  28303600  28307730
        28467400  28472800  28476200  28848000  28849000  28852100  28852200  28863000  28882000  36007000  36008000
```

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        37046800  37046810  37047250  37048100  37121000  37172000  37181000  38014700  38106000  38204000  39009050
TERMSGSZ  --  DEFINE  --  DECLARED AT 00439000
        02218000  02219000  30915000  30917000
TEST  --  LABEL  --  DECLARED AT 04124000  --  OCCURS AT 04165000
        04161000
TEST  --  REAL  --  DECLARED AT 08027100
       *08033990* 08051000
TEST  --  STREAM VARIABLE  --  DECLARED AT 08774000
       *08782000*
TEST  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09720000
        09708000
TEST  --  LABEL  --  DECLARED AT 12513500  --  OCCURS AT 12752500
        12743500
TESTBACKUP  --  LABEL  --  DECLARED AT 22062000  --  OCCURS AT 22205500
        22213700
TESTEND  --  LABEL  --  DECLARED AT 13019000  --  OCCURS AT 13134000
        13104000
TESTING  --  REAL  --  DECLARED AT 04554800
        04567845  04568485 *04654600*
TESTREADY  --  LABEL  --  DECLARED AT 14165000  --  OCCURS AT 14236000
        14244000
TF  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08800000
        08803000
TF  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16130000
        16062000  16063000
TFID  --  REAL  --  DECLARED AT 05950950
        05951000  05953135 *05956750* 05975750  05976800  05977900  05978050
TFID  --  STREAM VARIABLE  --  DECLARED AT 05953135
TFID  --  STREAM VARIABLE  --  DECLARED AT 05978050
THERE  --  STREAM VARIABLE  --  VALUE PARAMETER  --  DECLARED AT 00082000
        00083000  00087000
THERE  --  REAL SUBROUTINE  --  DECLARED AT 14549000
        14558500  14567000
THERE  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37046320
        37046120  37046940
THING  --  REAL  --  DECLARED AT 28803000
        28823000 *28881000* 28882100  28882120  28882400  28887000
THISLINK  --  INTEGER  --  DECLARED AT 08852000
        08860000 *08860500**08864000* 08865000  08915000  08941000  08944000  08944500  08946000
THISLINK  --  REAL  --  DECLARED AT 20012800
        20022300 *20025000**20025600* 20027300  20030700  20037100
THISLINK  --  REAL  --  DECLARED AT 20082000
        20090200
THISLINK  --  REAL  --  DECLARED AT 20142400
THU  --  LABEL  --  DECLARED AT 18205000
TI  --  LABEL  --  DECLARED AT 16055000  --  OCCURS AT 16246000
        16064000
TIM  --  REAL  --  DECLARED AT 04123500
       *04194050* 04195000
TIME  --  DEFINE  --  DECLARED AT 38383000
        38419000  38503000
TIME  --  DEFINE  --  DECLARED AT 38565000
TIME  --  DEFINE  --  DECLARED AT 38676000
        38817000
TIME  --  DEFINE  --  DECLARED AT 41020000
        41187000  41212000
TIMEAX  --  REAL  --  DECLARED AT 06185000
```

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        06189000  06195120  06198000  06199000  06201000  06202100  06203000 *06229000**06272000* 06279100
TIMEIT  --  SUBROUTINE  --  DECLARED AT 06186000
        06253000  06263100  06280000
TIMEOUT  --  PROCEDURE  --  DECLARED AT 08305000
        08412000  16500000  45075600
TIMEOUT  --  REAL  --  DECLARED AT 14624200
TIMER  --  LABEL  --  DECLARED AT 00008000  --  OCCURS AT 48000000
        46001000
TIMERELAXER  --  PROCEDURE  --  DECLARED AT 08730000
        08799000  16803000
TIMEUSED  --  PROCEDURE  --  DECLARED AT 08525000
        16247000
TIMEX  --  INTEGER  --  DECLARED AT 06184000
        06192000  06194000  06194900  06195110  06195115  06205030  06205040 *06224000* 06230100  06243100 *06271000*
        06279100
TINU  --  REAL ARRAY  --  DECLARED AT 00241700
        01260600  02434700  02668500 *04146000* 04244000  04251300  04271800  04359400 *04393800**04395400* 04401000
       *04405600* 04567320  04567790  04568550 *04569000* 04644000  04672500  04672950  04675000  04681800  04682550
       *04682850**04682900* 04683500  04684950 *04685850* 04686100  06239000 *06240000* 07019000 *07020000* 07074100
        07475000  08003000  08009000  08030200  08259830  08259850  08298800  08420000  08424000  08444000  08483000
        08496000  08548000  08551100  08558000  08578000  08590000  12670500  12700000  12700500 *12701000* 12823000
        12833000  15113800  15115100  16204000  16263100  18556400  20289154  20567166  20590200  20607020  22075000
        22115030  22119000  22129000  22159000  22191000  28011200  28023800  28032000  28056400  28065000  28096400
        28212000  28218400  28235800  28263400  28270820  28408400  37036400  37046190  37047020  37098000  37113100
        37216000  37221320  37221400  37224200  37240700  37285300  37285320 *37285400* 37314000  38031000  38045200
        38104800  38105800  38202800  38203800  39034000  39905000  39950000  41190800  41333005  44168000  44191025
       *44193600*
TINU  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 02348500
        02348000  02357000
TINUL  --  LABEL  --  DECLARED AT 44019000  --  OCCURS AT 44191235
        44191025
TIP  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01260450
        01260465
TISKTASK  --  PROCEDURE  --  DECLARED AT 19687000  --  FORWARD AT 17928500
        19685560  19800000
TK  --  STREAM VARIABLE  --  DECLARED AT 14414000
        14426100
TL  --  REAL ARRAY  --  DECLARED AT 02434130
       *02434410* 02434424  02434532  02434770  02434840
TL  --  STREAM VARIABLE  --  DECLARED AT 02434424
TM  --  REAL  --  DECLARED AT 02434120
       *02434440* 02434534  02434760  02434800
TM  --  REAL  --  DECLARED AT 02661000
        02663000 *02667000* 02668000
TM  --  REAL  --  DECLARED AT 04668650
       *04678650* 04678750  04679750  04681250
TM  --  REAL  --  DECLARED AT 28003600
        28011840  28012040  28041000  28047000 *28072600* 28082000  28082400  28095400
TM  --  REAL  --  DECLARED AT 28204000
        28232200  28256800  28304600
TM  --  INTEGER  --  DECLARED AT 40005110
       *40249105* 40290200  40290300  40322425
TMB  --  REAL  --  DECLARED AT 00650500
       *00655200* 00655400 *00655600* 00656000  00656200  00656400
TMID  --  REAL  --  DECLARED AT 05950900
        05950950  05953135 *05956550**05957350**05963800* 05964000  05975750  05976800  05977900  05978050
TMID  --  STREAM VARIABLE  --  DECLARED AT 05953135
```

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TMID  --  STREAM VARIABLE  --  DECLARED AT 05964000
        05964200
TMID  --  STREAM VARIABLE  --  DECLARED AT 05978050
        05978250
TMP  --  REAL  --  DECLARED AT 28001000
       *28012800* 28013000 *28014600* 28014800  28015000  28015400 *28015800* 28016000  28016200 *28050200**28050800*
        28051000  28051600  28052400  28053600 *28062800**28063400* 28063600 *28065000* 28065600 *28096000* 28097000
TMP  --  STREAM VARIABLE  --  DECLARED AT 28065000
TMP  --  REAL  --  DECLARED AT 28201400
       *28234600**28235000* 28235400 *28246800* 28248200  28248400  28248600  28250000  28250600  28251600 *28288800*
        28301600 *28305400* 28305600  28305800  28306200 *28307700* 28307705
TMP  --  REAL  --  DECLARED AT 28400600
       *28428800* 28429200  28429400  28429600  28430000 *28434200* 28434400  28434600 *28435000* 28438200 *28440000*
        28440200 *28442800* 28443200  28447600  28448800  28449000  28449600 *28452600* 28453400 *28453600* 28454200
       *28469200**28477800*
TMP  --  STREAM VARIABLE  --  DECLARED AT 28438200
TMR  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18711400
        18701200
TN  --  INTEGER  --  DECLARED AT 40005110
        40100200  40100600  40100700  40100800  40101250 *40249105* 40254100  40261046
TODEND  --  DEFINE  --  DECLARED AT 05780200
TODSIZE  --  DEFINE  --  DECLARED AT 05780100
        05852000  05972600  05972800  05973800  06085700  06093700  40322442  40322800
TOFUNP  --  DEFINE  --  DECLARED AT 05780025
        40324210
TOG  --  STREAM VARIABLE  --  DECLARED AT 02223000
        02251010 *02251030* 02251100
TOG  --  REAL  --  DECLARED AT 06068400
       *06091000**06091500**06096100* 06096300
TOG  --  STREAM VARIABLE  --  DECLARED AT 12225500
        12233000  12238000 *12238500*
TOG  --  STREAM VARIABLE  --  DECLARED AT 16041200
        16041500 *16042650* 16042800
TOG  --  REAL  --  NAME PARAMETER  --  DECLARED AT 18002000
        18000000 *18010000* 18017000  18026000  18029000  18031400  18032000 *18033500* 18035000  18050000  18053000
TOG  --  REAL  --  DECLARED AT 18198000
        18255000  18260000  18265000  18299000  18460000
TOG  --  STREAM VARIABLE  --  DECLARED AT 20053200
        20054600
TOG  --  STREAM VARIABLE  --  DECLARED AT 20061100
        20062900
TOG  --  STREAM VARIABLE  --  DECLARED AT 20064000
        20064400
TOG  --  REAL  --  DECLARED AT 20566100
TOG  --  REAL  --  DECLARED AT 20581000
TOG  --  REAL  --  DECLARED AT 20584000
TOG  --  REAL  --  DECLARED AT 20586800
TOG  --  REAL  --  DECLARED AT 20589800
TOG  --  REAL  --  DECLARED AT 20591000
TOG  --  REAL  --  DECLARED AT 20595000
TOG  --  REAL  --  DECLARED AT 20596800
TOG  --  REAL  --  DECLARED AT 20600010
       *20603550**20606650*
TOG  --  REAL  --  DECLARED AT 20701500
        20746000  20748000  20751000  20753000  20753800  20766000  20769400  20771100
TOG  --  REAL  --  DECLARED AT 38010100
       *38013510*
```

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TOG  --  REAL  --  DECLARED AT 38103100
TOG  --  REAL  --  DECLARED AT 38201100
TOG  --  REAL  --  DECLARED AT 39056100
        39258000
TOG  --  STREAM VARIABLE  --  DECLARED AT 41322500
        41322820
TOGGLES  --  REAL  --  DECLARED AT 04668750
       *04674100* 04674200  04674225 *04674300**04674350* 04675300  04675800 *04677800* 04678950  04679050  04679550
        04680250  04680350  04680850  04684550  04686000 *04687350* 04687900
TOGLE  --  REAL  --  DECLARED AT 00080000
       *02028000**02043000* 02196000 *02202100**02202500* 02434480 *02434490**02434530**05842300**05846395**05849300*
       *05853600**05960700**05970500**05975610**06103500**06103700**06116000**06116100**06353500**06410000**06463992*
       *07001640**07001840* 07059200  07232000 *07272500**07296000**07301000**07352000**07371300**07371600**07371950*
       *07426000* 07427610 *07427620**07427625**07427640**07455000**07562000**07568000**07572000* 08046000  08088000
       *08259575**08268000**08270650* 08378000 *08379000**08388000* 08421000  08571000 *08571100**08571600* 08580000
        08627000 *08628000**08677000* 08689200 *08689300**08696100**08830000**08836000**08880000**08997000**09617000*
       *09624000**09630000* 09637000 *09638000**09647000**09677000* 09680000 *09680100**09682620* 12386000  12530500
        14361000  14378100 *14379000**14396000**14560000**14569000**14588100**14618000**18023000**18033000**18273000*
       *18425200**18425400**18466000* 18841400 *18841500**18843700* 18844000 *18844100**18845500**19768800**19786000*
        20034900 *20035000* 20119600 *20119700**20120600* 20150800 *20150900* 20164000 *20210300* 20582440 *20582450*
       *20583650**20760000**20769200**20771020* 22007000 *22007100* 22009000 *22010000**22030000**22053700**22224000*
        22905000 *22906000**22920000* 24036125  24043000 *24043100**24043800**24044000**24044200**24045200* 37304000
       *40336000**40336100* 41320310 *41320320**41320355* 42476000 *44142000**44180000**44250000**44253500**45102000*
       *45135220**45138000**45150000* 48007000 *48008000* 48012500 *48013000* 48048000 *48049000**48054600* 48059000
        48084100 *48084200**48085000**48098000*
TOGS  --  REAL  --  DECLARED AT 28002200
        28002400  28011810 *28011832* 28012000  28013600  28013800  28022400  28025000  28025200 *28025600**28026200*
       *28028600* 28029400  28036400  28043600  28043800 *28048600**28049600**28055000**28058400**28062600* 28063200
        28063800 *28066000**28068800**28084100**28084400**28086400**28092000**28092800*
TOGS  --  REAL  --  DECLARED AT 28202600
        28202800  28213200  28217000  28219600  28219800 *28220200**28220800* 28225000  28225400  28231000  28231200
        28235000  28235200  28237200  28242800 *28246700* 28247800 *28253400**28256000* 28257400 *28258600* 28259600
       *28260000* 28260600 *28261100**28264900**28266400* 28266600 *28268800* 28273400  28276000 *28280400* 28280600
       *28285600**28296600* 28304500  28305000
TOGS  --  REAL  --  DECLARED AT 28401000
       *28415000* 28417800  28418000 *28418800**28419400**28419800**28431200**28433400* 28441200 *28442200**28448200*
       *28454800**28458200**28458400* 28466200 *28469000* 28469600  28470000  28470200  28474000  28474200  28475800
       *28477600* 28478200  28478400  28481200
TOG1  --  STREAM VARIABLE  --  DECLARED AT 16854700
        16855300
TOG2  --  STREAM VARIABLE  --  DECLARED AT 16854800
        16855400
TOHLD  --  REAL  --  DECLARED AT 20566300
        20566310  20566812  20566835 *20567235**20567250**20567255**20567270* 20567274 *20567280**20569522**20569845*
       *20569846* 20570350  20571700
TOIT  --  LABEL  --  DECLARED AT 02189000  --  OCCURS AT 02275250
        02276600
TOL  --  STREAM VARIABLE  --  DECLARED AT 12308000
        12317000
TOLTOG  --  REAL  --  DECLARED AT 12211000
       *12247000**12260500* 12308000
TOLTOG  --  STREAM VARIABLE  --  DECLARED AT 12308000
        12316500
TOMAXSIZ  --  DEFINE  --  DECLARED AT 05780010
        05852800  40324210  40334085
TONUMENT  --  DEFINE  --  DECLARED AT 05780040
        05852700  06101200  40324200
TOPIO  --  REAL  --  DECLARED AT 02192000
```

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      *02266000* 02266300  02275000  02275150  02275250  02275350  02275400  02275650  02275700  02275800  02276100
       02276370  02276400  02277000  02278100  02283000  02285100  02287210  02303000  02304000  02314000
TOP10D  --  REAL  --  DECLARED AT 04668650
      *04674000* 04674050  04674450  04682000 *04686450* 04686600
TOPIOD  --  REAL  --  DECLARED AT 15111900
      *15113200* 15113300  15115100
TOREELNO  --  DEFINE  --  DECLARED AT 38568100
       38608100
TOSIZE  --  DEFINE  --  DECLARED AT 05780300
       05844110  05844930  05850120  05953070  05961400  05966600  06077500  06095100  06107200  06109400  06380140
       06381250  16827100  19904450
TOSPEED  --  DEFINE  --  DECLARED AT 05780020
       40324200
TOSTARTWRD  --  DEFINE  --  DECLARED AT 05780030
       06380550  40324210
TOTALOLAY  --  REAL  --  DECLARED AT 12359000
      *12413000**12423000* 12425000  12467000
TOTALOLAYCORE  --  REAL  --  DECLARED AT 12362000
      *12387000**12395000*
TOTALPTIME  --  REAL  --  DECLARED AT 12358000
      *12413000**12423500* 12425000  12467000
TOTALSAVECORE  --  REAL  --  DECLARED AT 12362500
      *12387000**12391500*
TOTALSYSTEMCORE  --  REAL  --  DECLARED AT 12363000
      *12387000**12388500*
TOV  --  DEFINE  --  DECLARED AT 20239000
       20569610  20570310  20570500
TP  --  REAL ARRAY  --  DECLARED AT 02434130
      *02434430**02434590* 02434600  02434830
TP  --  REAL  --  DECLARED AT 20289035
      *20289144* 20289146  20289160  20289530
TP  --  STREAM VARIABLE  --  DECLARED AT 20289160
       20289195  20289235
TPNO  --  REAL  --  DECLARED AT 20397000
      *20445000**20451900**20457000**20459000**20460100**20461200**20461300**20461310**20461600**20461800**20461810*
      *20463000**20465000**20466100**20469000**20470000**20470100**20473000**20475000**20475100**20481000**20481100*
      *20481900**20482000**20483000**20483100**20486000* 20487000  20488000  20489000  20490000 *20503000* 20504000
       20505000  20507400
TR  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16496000
       16364000
TRACAREASIZE  --  DEFINE  --  DECLARED AT 00006000
TRACAREASTART  --  DEFINE  --  DECLARED AT 00006000
TRACESIZE  --  DEFINE  --  DECLARED AT 00006000
TRACETABLEAREAV  --  DEFINE  --  DECLARED AT 00017510
TRANS  --  REAL  --  DECLARED AT 41327400
       41329400  41329500  41329600 *41329700*
TRANSACTION  --  REAL ARRAY  --  DECLARED AT 00304000
      *04010000* 04011000 *04014500* 04279800 *04304400* 04367600 *04372600* 04374800 *04378200**04378600**04397600*
      *04412400**04567300* 04568320 *04568450**04568490* 04590000  04591000 *04630000**04672400**22115000* 41329700
       44172000
TRANSFER  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28479400
       28467600
TRP  --  REAL ARRAY  --  DECLARED AT 20013700
      *20066600*
TRP  --  REAL ARRAY  --  DECLARED AT 20082900
      *20092700**20093600**20122100* 20123500 *20123700**20123800**20124900* 20125300  20129500 *20129700*
TRP  --  REAL ARRAY  --  DECLARED AT 20143300
```

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       *20187400* 20188600 *20190800**20190900**20191000**20191400**20191700**20192100**20192300* 20192500  20192800
        20192900 *20193100* 20193200  20195600  20196600
TRUTH  --  LABEL  --  DECLARED AT 09701000  --  OCCURS AT 09713000
        09703000  09704000  09704100  09704500  09705000  09706000  09706050  09706100  09707000  09708000
TRYAGAIN  --  LABEL  --  DECLARED AT 00030000  --  OCCURS AT 00050000
        00039060
TRYAGAIN  --  LABEL  --  DECLARED AT 07244100  --  OCCURS AT 07255100
        07265300
TRYAGAIN  --  LABEL  --  DECLARED AT 08255700  --  OCCURS AT 08273600
        08276570
TRYAGAIN  --  LABEL  --  DECLARED AT 20146700  --  OCCURS AT 20175000
        20175800
TRYAGAIN  --  LABEL  --  DECLARED AT 20289030  --  OCCURS AT 20289142
        20289146
TRYAGAIN  --  LABEL  --  DECLARED AT 20586715  --  OCCURS AT 20587170
        20587350
TRYAGAIN  --  LABEL  --  DECLARED AT 22061200  --  OCCURS AT 22069025
        22069540
TRYAGN  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28055200
        28057800
TRYHERE  --  REAL  --  DECLARED AT 02004500
       *02007100* 02007300  02007500  02008100  02008200
TRYIT  --  LABEL  --  DECLARED AT 07356000  --  OCCURS AT 07371800
TRYNEXT  --  LABEL  --  DECLARED AT 13018000  --  OCCURS AT 13045000
        13041000
TRYNEXT  --  LABEL  --  DECLARED AT 20597650  --  OCCURS AT 20604100
        20604125  20604600  20604700
TRYNEXT  --  LABEL  --  DECLARED AT 28005800  --  OCCURS AT 28019600
        28026400
TRYNEXT  --  LABEL  --  DECLARED AT 28211000  --  OCCURS AT 28212800
        28221000
TS  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08884000
        08883000
TS  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16740500
        16703500
TSKA  --  REAL ARRAY  --  DECLARED AT 00024060
       *48032200* 48032250 *48032960*
TSKA  --  REAL ARRAY  --  DECLARED AT 14351050
        14351230 *14358345* 14358360  14358375  14358380  14358383  14358386 *14358392**14358393* 14358394  14358398
        14358400  14358450 *14358460**14358625**14358640*
TSKA  --  REAL ARRAY  --  DECLARED AT 19692100
        19697300  19697600 *19697700**19697800* 19704100  19788000 *19791000**19792000* 19799070
TSKA  --  REAL ARRAY  --  DECLARED AT 19901800
       *19903900* 19903907 *19903908* 19903917 *19904360**19905300*
TSKA  --  REAL ARRAY  --  DECLARED AT 20014000
TSKA  --  REAL ARRAY  --  DECLARED AT 20083200
TSKA  --  REAL ARRAY  --  DECLARED AT 20143600
       *20196600**20196800**20196900**20197000**20197100*
TSKA  --  DEFINE  --  DECLARED AT 22236150
        22356150  22356200  22365150  22365200
TSPOL  --  DEFINE  --  DECLARED AT 20235050
TSSINTYPE  --  DEFINE  --  DECLARED AT 00005140
        09633200
TSX  --  DEFINE  --  DECLARED AT 00067090
        14358392  18860100  19685570  19900395  19900745  19903900  20195600  20196600  22356150  42501040  48032200
        48032940
TS1  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08885000
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        08885500  08903000
TS2  --  LABEL  --  DECLARED AT 08855000  --  OCCURS AT 08904000
        08885000
TT  --  STREAM VARIABLE  --  DECLARED AT 37314200
        37316200
TTPE  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28255200
        28280800  28303000
TU  --  REAL  --  DECLARED AT 07269000
        07284000
TU  --  STREAM VARIABLE  --  DECLARED AT 07284000
TU  --  STREAM VARIABLE  --  DECLARED AT 08112175
        08112840
TU  --  STREAM VARIABLE  --  DECLARED AT 08887000
        08890100
TUANDBUF  --  DEFINE  --  DECLARED AT 08100520
TUSTA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02177100
TUSTA  --  REAL  --  DECLARED AT 07269000
       *07272000* 07274000
TUSTA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07298000
       *07351000
TUSTA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07406000
        07410000  07420010
TUSTA  --  REAL  --  DECLARED AT 08441050
        08480000 *08482050* 08484500  08507000
TUSTA  --  REAL  --  DECLARED AT 08680000
       *08689900* 08690600  08693000  08695200
TW  --  LABEL  --  DECLARED AT 19508010  --  OCCURS AT 19526200
        19511000  19512000  19513000  19513010
TWO  --  REAL PROCEDURE  --  DECLARED AT 00306000
        00309000  01260450  01261160  02197000  02434310  02434570  02665200  04105750  04146100  04150200  04296200
        04296400  04382800  04383200  04383900  04568360  05849420  06424000  07013000  07059300  07461500  08008000
        08103300  08114100  08259810  08427100  08432000  08450100  08551100  08579000  08667000  12453000  12473150
        12527500  12531000  12753500  12865500  14219000  14360400  14431510  14671000  17904000  17926500  20128400
        20601150  20608950  20609150  22014620  24038100  24165000  24211000  28028400  37037100  37046170  37248000
        37305000  38040000  38116000  38122100  38237500  38256500  38633000  38638500  40100300  40100600  40100800
        40101300  40257060  40261044  40261048  40261100  40334075  44106000  44122000  44128200  44214300
TWO  --  STREAM LABEL  --  DECLARED AT 07461500  --  OCCURS AT 07461530
TYM  --  REAL  --  DECLARED AT 20566265
        20566270 *20577300* 20577400 *20577575*
TYPE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00016000
        00014000  00015000
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019500
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00370500
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00373000
        00371000  00372000
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452000
        00451800  00451900
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452800
        00452600  00452700
TYPE  --  REAL  --  NAME PARAMETER  --  DECLARED AT 01250200
        01250100  01255900  01256700  01257400  01257800  01258300  01259500 *01261150*
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02132500
        02132300  02132400  02134890  02173389
TYPE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 02697770
        02697750  02697770
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121450
TYPE  --  SWITCH LABEL  --  DECLARED AT 04128000
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        04162000
TYPE  --  REAL  --  DECLARED AT 04356400
        04367800  04368400  04370000 *04372800* 04377000  04380400  04380600  04380800  04382000  04387000  04387800
        04389000  04393400
TYPE  --  REAL  --  DECLARED AT 05952220
        05952755  05952975  05956450  05956700  05956750  05956950  05957150  05957500 *05975850**05976500**05976650*
       *05977950* 05978050
TYPE  --  STREAM VARIABLE  --  DECLARED AT 05952755
       *05952960*
TYPE  --  STREAM VARIABLE  --  DECLARED AT 05978050
        05978400 *05978900*
TYPE  --  REAL  --  DECLARED AT 06462100
       *06463225**06463920**06463940* 06463950 *06463980**06464300**06465400**06465880**06466500* 06466700
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08732000
        08730000  08731000  08736000  08757000  08775000
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08850100
        08850000  08883000 *08901500**08904050* 08913000  08998200
TYPE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 14107000
        14105000  14106000  14110000
TYPE  --  SWITCH LABEL  --  DECLARED AT 15069000
        15074000
TYPE  --  REAL  --  DECLARED AT 16035100
       *16041100* 16041110  16041200  16043500 *16043680**16043750*
TYPE  --  REAL  --  DECLARED AT 16048000
       *16074000* 16077000  16082000 *16084000* 16123000  16131000  16132000 *16135000* 16181000  16206200  16215000
        16244000  16254000  16343100
TYPE  --  REAL  --  DECLARED AT 16349000
       *16375000* 16378000  16609100
TYPE  --  STREAM VARIABLE  --  DECLARED AT 16609100
       *16610100*
TYPE  --  REAL  --  DECLARED AT 16693500
        16694000  16698100 *16711500* 16714500  16741000  16750000  16786500  16803000  16804500
TYPE  --  REAL  --  DECLARED AT 16909000
        16909500 *16926010* 16926020  16927500 *16928500* 16929000  16951500  16953000  16957500
TYPE  --  REAL  --  DECLARED AT 19901100
        19902700
TYPE  --  REAL  --  DECLARED AT 20013100
        20023200  20023300 *20025800* 20029300 *20036300**20037400**20037900* 20038500 *20046900**20047400* 20048100
TYPE  --  REAL  --  DECLARED AT 20082300
TYPE  --  REAL  --  DECLARED AT 20142700
       *20149400* 20150600  20151400 *20151500**20162800* 20163100 *20163200**20185800* 20187000 *20187100**20187600*
       *20187900**20189300* 20189600 *20189700**20199400*
TYPE  --  SWITCH LABEL  --  DECLARED AT 20317000
        20357000
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20386000
        20384000  20385000  20398000 *20409000**20419000**20423000* 20424000 *20426000**20430000**20432000**20436000*
       *20438000**20441000* 20448000  20448050 *20448100* 20449000  20449100  20450000 *20451000**20461000* 20461050
        20461100  20461300 *20461500* 20461650  20461700  20461810  20461900  20461950 *20463000**20467000* 20467100
        20468000  20470000 *20472000* 20473100  20474000  20475100  20476000  20477000 *20478510**20478540* 20478550
       *20484050* 20484100 *20484250* 20484300  20484500  20484650  20484750  20484855  20504000  20504500  20507300
        20507400
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20511120
        20511100  20511110  20511155  20511295  20511312  20511450
TYPE  --  SWITCH LABEL  --  DECLARED AT 20597900
        20603600
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 24042400
        24042200  24042300  24045500
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TYPE  --  REAL  --  DECLARED AT 28803000
      *28857000*
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 30903000
      30918000  30919000
TYPE  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 31000000
      31005050  31011000  31017220
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37002000
      37000000  37001000 *37046005* 37046020  37046040  37046070  37046080  37046090  37046100  37046192  37046350
      37046370  37046630  37046730  37046800  37046855 *37046860* 37056000 *37058000*
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 37357500
      37357300  37357400  37383000
TYPE  --  INTEGER  --  DECLARED AT 38003000
      38024100  38045300  38050000
TYPE  --  INTEGER  --  DECLARED AT 38102300
TYPE  --  INTEGER  --  DECLARED AT 38200300
      38213500  38227000  38230000  38237000 *38245000* 38246000 *38256000* 38265000  38279500  38289000  38289200
TYPE  --  REAL  --  DECLARED AT 38562100
      38581910  38583000  38590100  38591100  38607100  38626000
TYPE  --  INTEGER  --  DECLARED AT 39002000
      39034000 *39085000* 39092045  39092050  39092055  39092060 *39092080* 39092100 *39092160**39092175* 39093000
      39093500  39094500  39297020
TYPE  --  REAL  --  DECLARED AT 41017300
      *41144000*
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 41310100
      41310400
TYPE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 42510000
      42518000 *42537050* 42539060
TYPEDISK  --  REAL  --  DECLARED AT 20017900
      *20063900* 20064000
TYPEDSPACE  --  DEFINE  --  DECLARED AT 00017010
      02181000  02434430  02639000  04004170  04278200  04365400  04555250  05952995  06037300  06210000  06380350
      07256400  07257400  08274250  08275500  08385100  08410000  08881000  08930000  14411820  14603750  18013000
      18286000  18438120  18520600  20026600  20049000  22069050  22069100  28070000  28452600  28456800  38434000
      40278150  41312700  41314000  41323130
TYPENOMFMANDRETURN  --  FIELD  --  DECLARED AT 24042585
      24044110
TYPEOPEN  --  SUBROUTINE  --  DECLARED AT 38103400
      38115500
TYPEOPEN  --  SUBROUTINE  --  DECLARED AT 38201400
      38236500
TYPEOUT  --  LABEL  --  DECLARED AT 08802000  --  OCCURS AT 08837000
      08803000
TYPESW  --  SWITCH LABEL  --  DECLARED AT 37008000
      37056000
TYPE0  --  LABEL  --  DECLARED AT 20316000  --  OCCURS AT 20358000
      20317000
TYPE1  --  LABEL  --  DECLARED AT 20316000  --  OCCURS AT 20381000
      20317000  20324000  20365000  20367000  20372000  20374300  20374320
TYPE13  --  REAL  --  DECLARED AT 22235500
      *22420200* 22423100
TYPE13INTAREAV  --  DEFINE  --  DECLARED AT 00017320
      22386010
TYPE2  --  LABEL  --  DECLARED AT 20316000  --  OCCURS AT 20368000
      20317000
TYPE45  --  DEFINE  --  DECLARED AT 00017576
TYPE46  --  DEFINE  --  DECLARED AT 00017578
TYPE47  --  DEFINE  --  DECLARED AT 00017580
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TYPE48  --  DEFINE  --  DECLARED AT 00017582
TYPE7INTAREAV  --  DEFINE  --  DECLARED AT 00017260
        22386000
TYPOP  --  PROCEDURE  --  DECLARED AT 08679000
        16750000
TO  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978500
TOP  --  REAL ARRAY  --  DECLARED AT 42513000
        42521000  42532000
T1  --  REAL  --  DECLARED AT 04259600
       *04309800* 04311600 *04311800* 04312200  04313000 *04315400* 04316600
T1  --  REAL  --  DECLARED AT 04354800
       *04400400* 04400600  04401000 *04429200* 04430400 *04430600* 04431000  04431800
T1  --  STREAM VARIABLE  --  DECLARED AT 04401000
T1  --  REAL  --  DECLARED AT 04551000
       *04559000* 04560000  04561000  04563000  04565000
T1  --  REAL  --  DECLARED AT 04668600
       *04671650* 04671700  04671750  04671800  04671900  04672000
T1  --  STREAM LABEL  --  DECLARED AT 05952845  --  OCCURS AT 05952880
T1  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978600
T1  --  STREAM VARIABLE  --  DECLARED AT 06195110
T1  --  REAL  --  DECLARED AT 07006050
       *07023000* 07024000 *07043000* 07044000  07045000
T1  --  STREAM VARIABLE  --  DECLARED AT 07295030
        07295050  07295060  07295100
T1  --  REAL  --  DECLARED AT 07542000
        07548100 *07559000* 07560000  07565000  07570000
T1  --  REAL  --  DECLARED AT 12361000
       *12407000* 12410500  12411000 *12468000* 12471500 *12473210* 12473280
T1  --  STREAM VARIABLE  --  DECLARED AT 12411000
        12412000
T1  --  REAL  --  DECLARED AT 14002000
        14020000  14030000 *14045000* 14046000  14047000
T1  --  STREAM VARIABLE  --  DECLARED AT 14020000
       *14027000*
T1  --  STREAM VARIABLE  --  DECLARED AT 18831700
        18831900
T1  --  REAL  --  DECLARED AT 19693000
       *19713000* 19714000 *19722000* 19723000  19724000  19727000  19728000 *19736000**19746000* 19750000  19750100
        19751000  19753000  19754000  19757000  19766300 *19768768* 19768782 *19773000* 19792000
T1  --  STREAM VARIABLE  --  DECLARED AT 19768768
T1  --  STREAM VARIABLE  --  DECLARED AT 20053200
       *20053900* 20054300
T1  --  REAL  --  DECLARED AT 20511150
       *20511315**20511515* 20511666
T1  --  REAL  --  DECLARED AT 20566100
        20567056  20567057  20567096  20567097 *20569930**20569960* 20570130  20570150  20570190  20570210 *20573400*
        20573402 *20573430* 20573432 *20573525*
T1  --  REAL  --  DECLARED AT 20581000
T1  --  REAL  --  DECLARED AT 20584000
T1  --  REAL  --  DECLARED AT 20586800
T1  --  REAL  --  DECLARED AT 20589800
T1  --  REAL  --  DECLARED AT 20591000
        20593450
T1  --  REAL  --  DECLARED AT 20595000
T1  --  REAL  --  DECLARED AT 20596800
T1  --  REAL  --  DECLARED AT 20600010
T1  --  REAL  --  DECLARED AT 20701500
```

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T1  --  REAL  --  DECLARED AT 22058000
        22060000 *22112000**22112100**22112500* 22113000 *22114000* 22115020  22116000  22117000  22146000 *22163000*
        22164000  22172000  22185000
T1  --  STREAM VARIABLE  --  DECLARED AT 22164000
T1  --  REAL  --  DECLARED AT 37019000
        37022000  37022200  37024000 *37036300* 37036400  37037000 *37046100**37046180* 37046194  37046260  37046270
       *37046280* 37046300 *37046370**37046390* 37046400  37046410  37046430 *37046520* 37046620  37046630 *37096000*
        37098000  37100000 *37112000**37122000* 37123000  37124000
T1  --  STREAM VARIABLE  --  DECLARED AT 37036400
T1  --  REAL  --  DECLARED AT 37180000
       *37192000* 37193000  37194000 *37205000* 37206000  37212000 *37221200* 37221280 *37221320**37221400**37230000*
        37232500  37233250  37233500  37235000 *37240500* 37240600 *37241010* 37241030 *37241510* 37241525  37241530
       *37243000* 37244000  37245000 *37249000* 37254000  37255100  37255900  37256000 *37263000**37264000*
T1  --  STREAM VARIABLE  --  DECLARED AT 37241030
T1  --  STREAM VARIABLE  --  DECLARED AT 37255100
        37255300  37255500
T1  --  REAL  --  DECLARED AT 37388250
        37388275 *37394200* 37394250 *37394650* 37394700
T1  --  REAL  --  DECLARED AT 38006000
       *38074000* 38075500
T1  --  REAL  --  DECLARED AT 38102600
       *38103600* 38103700  38105000  38105400 *38107000* 38107100 *38118000**38120000**38120500* 38121000  38121500
       *38123000**38126000**38129500**38130000* 38131000  38137000  38137500 *38139500**38146500* 38147500  38148000
T1  --  REAL  --  DECLARED AT 38200600
       *38201600* 38201700  38203000  38203400 *38205000* 38205100 *38218000* 38218500  38219000  38220000  38220500
        38221000  38226500  38227500  38228000 *38246500* 38247500  38248000  38248500  38249500  38250000  38251000
       *38263500* 38267000 *38283500* 38286000 *38292000**38294000*
T1  --  REAL  --  DECLARED AT 38365000
       *38448000* 38449000 *38453000**38457000* 38467000  38468000 *38469000* 38472000  38473000 *38484000* 38485000
        38486000
T1  --  REAL  --  DECLARED AT 38549000
       *38581200**38608900* 38608910  38628100
T1  --  REAL  --  DECLARED AT 38656000
T1  --  REAL  --  DECLARED AT 39004000
       *39032000* 39035000  39037000  39039000 *39042000* 39043000  39046000 *39092165**39306100* 39306300
T1  --  REAL  --  DECLARED AT 41007200
T1  --  REAL  --  DECLARED AT 41316300
       *41317790* 41318740  41318760  41318820  41318840  41318860  41318940  41318960  41319000  41319200  41319220
        41319280  41319320  41319600  41319900  41320000  41320100  41320200  41320220  41320330  41320340  41320345
        41320350  41320420  41320450  41320460  41320470  41320480  41320490  41320500  41321200  41321350  41321450
        41321500  41321600  41321800  41321900  41322000  41322100  41322200  41322300  41322400  41322450  41322500
        41323100 *41323130* 41323150  41323160  41323170  41323180 *41323300**41323400* 41323550  41323600  41324200
        41324300  41324800  41325400  41325500
T1  --  REAL  --  DECLARED AT 41327600
       *41330700* 41330800  41331000  41331100 *41331200**41331700* 41332300  41332500  41332600 *41333000* 41333001
       *41333010* 41333090 *41333100**41334400* 41334700
T1  --  REAL  --  DECLARED AT 44014000
T1  --  REAL  --  DECLARED AT 44207000
       *44241000* 44246500 *44247000* 44248000
T1  --  REAL  --  DECLARED AT 45002600
        45154000
T1FILL  --  LABEL  --  DECLARED AT 37422300  --  OCCURS AT 37437000
T10  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06381500
        06381395  06381400
T17SIZE  --  REAL  --  DECLARED AT 09501000
       *09505700* 09506000  09506100  09508600  09508800
T2  --  REAL  --  DECLARED AT 04259800
```

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T2  --  REAL  --  DECLARED AT 04355000
        04365400  04365600  04370000 *04373000**04377000**04382000**04387000**04393400**04395800**04405400**04416600*
       *04421400*
T2  --  REAL  --  DECLARED AT 04551000
       *04561000* 04562000 *04567320* 04567600 *04567790* 04567830 *04568364* 04568366 *04568550* 04568590  04606000
       *04644000* 04647550  04648000
T2  --  STREAM VARIABLE  --  DECLARED AT 04647550
T2  --  REAL  --  DECLARED AT 04668600
       *04671750* 04671850 *04672500* 04672700 *04672950* 04673150 *04674750* 04674850 *04675000* 04675250  04675900
        04676300 *04681400* 04681450  04681800 *04683500* 04683800 *04686100* 04686350 *04686950* 04687050
T2  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978650
T2  --  STREAM VARIABLE  --  DECLARED AT 06195115
T2  --  REAL  --  DECLARED AT 06462100
       *06463200* 06463220  06463225  06463230 *06463380* 06463400 *06463500* 06463600  06463620  06463740  06463810
T2  --  STREAM VARIABLE  --  DECLARED AT 06463400
        06463420 *06463460*
T2  --  REAL  --  DECLARED AT 07006050
       *07024000* 07025000 *07043000**07045000* 07047000
T2  --  STREAM VARIABLE  --  DECLARED AT 07295030
       *07295040* 07295060 *07295070* 07295080
T2  --  REAL  --  DECLARED AT 07542000
       *07548100* 07559100  07559110  07559120
T2  --  REAL  --  DECLARED AT 12361500
       *12408000* 12410500  12411000
T2  --  STREAM VARIABLE  --  DECLARED AT 12411000
T2  --  REAL  --  DECLARED AT 14002000
        14020000  14030000  14033000  14040000  14043000  14051000  14056000  14065000  14072000
T2  --  STREAM VARIABLE  --  DECLARED AT 14020000
        14022000
T2  --  REAL  --  DECLARED AT 15111900
       *15113800* 15114300 *15115100* 15115200 *15115700* 15115900
T2  --  REAL  --  DECLARED AT 19693000
       *19711300* 19711400 *19756000* 19757000  19760000  19761000  19762000 *19779000* 19781000
T2  --  STREAM VARIABLE  --  DECLARED AT 20053200
       *20054100**20054300**20054600* 20055000
T2  --  STREAM VARIABLE  --  DECLARED AT 20061000
        20062600  20062700
T2  --  REAL  --  DECLARED AT 37019000
        37042000 *37046100* 37046160 *37046400* 37046420  37046430 *37046480* 37046520
T2  --  STREAM VARIABLE  --  DECLARED AT 37046520
        37046590
T2  --  REAL  --  DECLARED AT 37180000
       *37230000* 37230250 *37231500* 37232000  37232250
T2  --  STREAM VARIABLE  --  DECLARED AT 37230250
        37230500 *37231000*
T2  --  REAL  --  DECLARED AT 38006000
        38014200  38014620  38015700 *38039000* 38040000 *38041000* 38043000 *38059000* 38070000  38074500  38080500
        38081750 *38087000* 38088000
T2  --  REAL  --  DECLARED AT 38102600
       *38105400* 38105500  38127000  38127500 *38140000* 38141000
T2  --  REAL  --  DECLARED AT 38200600
       *38203400* 38203500 *38213000* 38236010  38253000  38284000  38285500 *38293500* 38294000
T2  --  REAL  --  DECLARED AT 38365000
       *38450000* 38458000  38459000 *38460000*
T2  --  REAL  --  DECLARED AT 38549000
T2  --  REAL  --  DECLARED AT 38656000
T2  --  REAL  --  DECLARED AT 39004000
```

```
        *39043000* 39046000 *39233200* 39233300
T2  --  REAL  --  DECLARED AT 41007200
T2  --  REAL  --  DECLARED AT 41316300
        *41319240* 41319300 *41320460* 41320470  41320500  41321200  41321550
T2  --  REAL  --  DECLARED AT 41327600
        *41333000* 41334600
T3  --  REAL  --  DECLARED AT 04355200
        04356800 *04374600* 04378400 *04410400*
T3  --  REAL  --  DECLARED AT 04551000
        *04561000* 04563000
T3  --  REAL  --  DECLARED AT 04668600
        *04671750* 04671900
T3  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978550
T3  --  STREAM VARIABLE  --  DECLARED AT 06195120
T3  --  REAL  --  DECLARED AT 19693000
        *19711100* 19711300 *19748000* 19750000  19750100  19751000
T3  --  REAL  --  DECLARED AT 37019000
        *37027000* 37027500  37028000  37041000 *37046110* 37046160 *37046410* 37046420 *37046470* 37046520
T3  --  STREAM VARIABLE  --  DECLARED AT 37046520
        37046580
T3  --  REAL  --  DECLARED AT 38365000
        *38435000* 38439000  38443000  38452000 *38461000**38465000* 38469000
T3  --  REAL  --  DECLARED AT 38549000
T3  --  REAL  --  DECLARED AT 38656000
T3  --  REAL  --  DECLARED AT 41007200
T3  --  REAL  --  DECLARED AT 41316300
        *41317800* 41318370  41318380 *41319020* 41319040  41319080  41319100 *41319120**41319220* 41319240 *41320600*
        41321100 *41321350* 41321450  41321500 *41321550*
T4  --  REAL  --  DECLARED AT 04554500
        *04555250* 04555300  04555500  04557200 *04557300*
T4  --  REAL  --  DECLARED AT 04668600
        04671400 *04671450*
T4  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978700
T4  --  STREAM VARIABLE  --  DECLARED AT 06195118
T4  --  REAL  --  DECLARED AT 19693000
        *19733400* 19733600 *19734000* 19736000  19746000
T5  --  STREAM LABEL  --  DECLARED AT 05978450  --  OCCURS AT 05978800
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00019000
        00018000  00019000
U   --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 00336110
        00336100
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00377000
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00380000
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00392000
U   --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00397000
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 01165000
U   --  REAL  --  VALUE PARAMETER  --  DECLARED AT 01250200
        01250100  01250200  01253900  01254650  01255100  01255200  01255450  01255500  01256100  01256400  01258500
        01258600  01258700  01258900  01260450  01260500  01260600  01261100  01261160
U   --  REAL  --  DECLARED AT 02057000
        *02059000* 02061000 *02075000* 02077000  02092000  02097000  02097400  02101000
U   --  REAL  --  DECLARED AT 02434120
        02434174 *02434185* 02434190  02434195 *02434200* 02434210  02434250  02434260  02434270  02434310  02434400
        02434410  02434424  02434532  02434534  02434600  02434630  02434690  02434700  02434760  02434770  02434780
        02434800  02434810
U   --  STREAM VARIABLE  --  DECLARED AT 02434700
        02434720
```

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U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02696100
        02696000  02696100
U  --  REAL  --  NAME PARAMETER  --  DECLARED AT 02696700
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04002000
        04000000  04001000  04005000  04008000  04010000  04011000  04013300  04014500
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04016000
        04016100  04016200  04017000
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04020000
        04022000  04026000  04029000  04032000
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04035000
        04036200  04037000
U  --  REAL  --  DECLARED AT 04044000
        *04045100*  04045200  *04048800*  04050000  04052000  04062000
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04067000
        04093000
U  --  REAL  --  DECLARED AT 04116000
        *04117000*  04118000  04120000
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04121550
        04121500  04121550
U  --  REAL  --  DECLARED AT 04123500
        04129560  04134000  04134060  04134300  04137110  04137130  04137220  04146000  04146100  04146200  04150100
        04154000  04156000  04180000  04191000  04194200  04203000  04205012  04211000  04219100  04220000  04224010
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04242000
        04240000  04241000  04244000  04247000  04251300  04252800
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04255000
        04254000  04255000
U  --  REAL  --  DECLARED AT 04256800
        04271800  04278400  04279800  04281800  04283000  *04284200*  04295400  04296200  04296400  04296600  04304400
U  --  REAL  --  DECLARED AT 04354600
        04359400  04365600  04367200  04367600  04367800  04368200  04368800  04369000  04369200  *04372000*  04372400
        04372600  04374600  04374800  04375800  04377600  04377800  04378000  04378200  04378400  04378600  04378800
        04381200  04382800  04383200  04383800  04383900  04391550  04393800  04395400  04397200  04397600  04401000
        04405600  04412400  04421600  *04421900*  04428800  04432200  04432600  04432800
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 04550000
        04548000  04549000  04555650  04561000  04563000  04564000  04567000  04567300  04567320  04567790  04568320
        04568360  04568450  04568490  04568550  04569000  04569100  04569200  04570000  04590000  04591000  04630000
        04644000  04651000  04657400  04658400
U  --  REAL  --  DECLARED AT 04668550
        04671750  04671850  04671900  04671950  04672100  04672400  04672500  04672950  *04673650*  04673750  04673850
        04674000  04675000  04675450  04675500  04678200  *04678450*  04678600  04680150  04680200  *04680950*  04681050
        *04681250*  04681350  04681450  04681800  04681950  04682000  04682050  04682450  04682550  04682850  04683500
        04684700  04684850  04684950  04685300  04685850  04685900  04686100  04686550  04687100  *04687200*  04687300
        04688050
U  --  DEFINE  --  DECLARED AT 05841620
        05842475  05842700  05843000  05844920  05844935  05845400  05845700
U  --  DEFINE  --  DECLARED AT 05847600
        05848255  05849420  05849460  05849500  05850200  05850300  05852700
U  --  DEFINE  --  DECLARED AT 05952400
        05961000  05961800  05962000  05971800  05974000  05974200  05975000
U  --  DEFINE  --  DECLARED AT 06070300
        06101200  06108000  06108300
U  --  DEFINE  --  DECLARED AT 06351105
        06380100  06380150  06380250  06380550  06381300  06381320
U  --  INTEGER  --  DECLARED AT 07355100
        07360000  *07372090*  07372100  07372200  07372300  07372310  07372320  07372500
U  --  REAL  --  DECLARED AT 07474000  --  OCCURS AT 07360000
        *07475000*  07477000  07478000  07478100  07478500  07479100
```

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U  --  REAL  --  NAME PARAMETER  --  DECLARED AT 08001000
        08000000 *08003000* 08005000  08008000  08009000  08014000  08018000
U  --  REAL  --  DECLARED AT 08026000
        08029000  08029100  08030000  08030200  08030400  08031100  08033990  08033994  08041000  08042000  08043000
        08044000  08044600  08045000  08050000  08051010  08051065  08054000
U  --  STREAM VARIABLE  --  DECLARED AT 08030200
        08030310
U  --  REAL  --  DECLARED AT 08080000
        08083000  08085000  08086000  08087000  08091000
U  --  REAL  --  DECLARED AT 08172000
        *08174000* 08175100  08175300
U  --  INTEGER  --  DECLARED AT 08255200
        *08258600**08259810* 08259820  08259850 *08270100* 08270750  08272000
U  --  REAL  --  DECLARED AT 08283000
        *08291500* 08292000  08292500  08293000  08295200  08296225  08296600  08296800  08298000  08298800
U  --  STREAM VARIABLE  --  DECLARED AT 08296225
U  --  STREAM VARIABLE  --  DECLARED AT 08298800
        08299400
U  --  REAL  --  DECLARED AT 08418500
        *08420000* 08421000  08422000  08424000  08427100  08430000  08431000  08432000  08434100  08434200  08434400
        08437150
U  --  REAL  --  DECLARED AT 08440000
        08444000  08447000  08447100  08448050  08450100  08451100  08454000  08460000  08471010  08471100  08471105
        08472000  08473000  08478800  08478900 *08483000* 08484500  08487100 *08495000* 08496000  08497000
U  --  REAL  --  DECLARED AT 08547000
        08547300  08547400  08547500 *08547600**08548000* 08550000  08551100 *08555000* 08557000  08558000 *08562000*
        08564000  08565000
U  --  REAL  --  DECLARED AT 08576000
        *08578000* 08579000  08581000  08582000  08582100  08590000
U  --  STREAM VARIABLE  --  DECLARED AT 12823000
        12824000 *12825000*
U  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 15110100
        15110000  15110100  15113100  15113200  15113800  15114700  15115000  15115100
U  --  REAL  --  DECLARED AT 16048100
        *16263100* 16263200  16263300  16263350  16263600
U  --  DEFINE  --  DECLARED AT 16697800
        16826600  16828100  16828200
U  --  REAL  --  DECLARED AT 19900260
        *19900380* 19900440  19900450  19900455  19900530  19900550  19900560  19900565  19900620  19900630  19900650
        19900670  19900675 *19900770* 19900800
U  --  REAL  --  DECLARED AT 20566100
U  --  REAL  --  DECLARED AT 20581000
U  --  REAL  --  DECLARED AT 20584000
U  --  REAL  --  DECLARED AT 20586800
U  --  REAL  --  DECLARED AT 20589800
U  --  REAL  --  DECLARED AT 20591000
U  --  REAL  --  DECLARED AT 20595000
U  --  REAL  --  DECLARED AT 20596800
U  --  REAL  --  DECLARED AT 20600010
        20607020
U  --  STREAM VARIABLE  --  DECLARED AT 20607020
        20607120
U  --  REAL  --  DECLARED AT 20701500
U  --  REAL  --  DECLARED AT 22056000
        22057000  22069190  22069350  22069460  22069470  22069480  22069490 *22075000* 22081000  22083000  22084000
        22084500  22090000  22091000  22093000  22097000  22100000  22100500  22105000  22106000  22107000  22112000
        22112100  22112500  22114000  22115000  22115030  22117000  22119000  22125000  22129000  22145000  22145525
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        22145550  22159000  22175000  22179000  22180000  22185000  22188000  22188100  22189000  22190000  22191000
        22200000  22203000  22204000  22207000  22212200  22212400  22212450  22213600  22213700  22220000
U  --   STREAM VARIABLE  --  DECLARED AT 22069350
        22069390
U  --   REAL  --  DECLARED AT 28003800
U  --   REAL  --  DECLARED AT 28204200
        28234000  28235800  28236400 *28240800**28244400**28244800*
U  --   REAL  --  DECLARED AT 28401000
        28408400  28431000  28431800  28446300 *28459000* 28459200 *28466000* 28480400  28481400
U  --   REAL  --  DECLARED AT 37003100
       *37010000**37011000**37015000**37016000**37019200**37022000**37022100**37023000* 37024000  37025000  37026000
        37027000 *37031000* 37032000  37036400 *37037100* 37037200 *37040000* 37041000  37042000  37046160  37046170
        37046177  37046190  37046260  37046300  37046320 *37046520**37046835* 37046840 *37046855**37046860* 37046880
        37046980  37047020 *37047500**37047605* 37047610  37047625  37047650 *37048000* 37048200  37048300  37048310
        37058000  37059000 *37097000* 37098000  37100000  37122000 *37172000* 37173000  37174000  37174100  37175000
U  --   STREAM VARIABLE  --  DECLARED AT 37046190
        37046200
U  --   REAL  --  DECLARED AT 37180000
       *37185380**37188500* 37189000  37189500  37190000  37191000  37192000  37195030 *37198000* 37199000  37199100
        37200000  37202000  37204000  37205000  37207000  37212000  37214000  37216000  37218200 *37221140**37221160*
       *37221260* 37221320  37221400 *37221460**37233750**37235000* 37235100  37235500  37235750  37236000  37236500
        37236750 *37240400* 37240500  37240700  37241020  37241030 *37241900* 37242600  37243000  37248000  37253000
        37254000  37255900  37269000
U  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 37271000
        37273100  37276000  37284000  37284100  37284120  37284130  37284150
U  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 37302000
        37303200  37305000  37314000  37314100  37314200  37318100  37319000  37319010  37319020
U  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 37321000
        37320000  37321000  37323300  37329000  37331000
U  --   REAL  --  DECLARED AT 37388400
        37404000
U  --   INTEGER  --  VALUE PARAMETER  --  DECLARED AT 37449000
        37453100  37455000  37456000  37458000  37464000
U  --   INTEGER  --  DECLARED AT 38003000
       *38021000* 38027000  38045200
U  --   INTEGER  --  DECLARED AT 38102300
        38104200  38104300  38104800  38105400  38105600  38105800  38106100 *38112000**38113000* 38114500  38115100
        38116000  38116500  38118000  38120000  38122100  38137000  38142000  38146500  38147000  38152000 *38157000*
U  --   INTEGER  --  DECLARED AT 38200300
        38202200  38202300  38202800  38203400  38203600  38203800  38204100 *38212000**38213500* 38216000  38217000
        38217500  38218500  38227000  38227500  38230500  38231000 *38232500* 38234000  38235500  38237500  38238000
        38247000  38254100  38256500  38258500  38271000  38271500  38276000  38297500
U  --   INTEGER  --  DECLARED AT 38359000
        38403000  38406000  38411750
U  --   INTEGER  --  DECLARED AT 38544000
        38624000  38629000  38632000  38633000  38634000  38637000  38638000  38638500  38640000
U  --   INTEGER  --  DECLARED AT 38652000
        38689000  38699000  38700000  38719000  38720000  38724000  38730000  38731000  38732000  38732300  38736000
        38737000  38741000  38741100  38742000  38742100  38743000  38751000  38754000  38755000  38760000  38766000
        38767000  38769000  38775000  38779000  38783000  38786000  38788000  38788500  38789000  38789100  38795000
        38798000  38799000  38804000  38806200  38806300
U  --   INTEGER  --  DECLARED AT 39002000
        39034100  39096000  39144000  39145210  39156000  39230000 *39235000**39236900* 39238000 *39240000* 39242000
        39244000 *39293100* 39293300  39293400  39296000  39298000  39306010 *39306100* 39306200 *39306300*
U  --   INTEGER  --  DECLARED AT 41002000
       *41043000* 41051620  41190800
U  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 41312100
```

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        41312000  41312100
U  --  REAL  --  DECLARED AT 41327600
       *41329700* 41333005
UA  --  REAL ARRAY  --  DECLARED AT 06351104
       *06380140**06380400* 06380525  06380850  06380900  06380950  06381070  06381085
UC  --  STREAM VARIABLE  --  DECLARED AT 14570000
        14572100
UCHANG  --  REAL  --  DECLARED AT 40005110
       *40281110**40283210**40285035*
UL  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00376000
        00374000  00375000
UL  --  REAL  --  NAME PARAMETER  --  DECLARED AT 37179000
        37177000  37222100  37222500  37225100 *37235000* 37242000  37248500
ULAB  --  REAL ARRAY  --  DECLARED AT 01250400
       *01250700* 01250800  01251100  01252600  01254000 *01254650* 01259800  01260600  01261100  01261300  01261400
ULAB  --  STREAM VARIABLE  --  DECLARED AT 01251100
ULAB  --  STREAM VARIABLE  --  DECLARED AT 01252600
ULAB  --  STREAM VARIABLE  --  DECLARED AT 01254000
        01254200
ULAB  --  STREAM VARIABLE  --  DECLARED AT 01259800
        01259900
ULAB  --  STREAM VARIABLE  --  DECLARED AT 01260600
UN  --  REAL  --  DECLARED AT 28003400
UN  --  REAL  --  DECLARED AT 28401600
       *28435400* 28440000
UNBLK  --  LABEL  --  DECLARED AT 20020300  --  OCCURS AT 20060900
        20066200
UNHOOQUE  --  PROCEDURE  --  DECLARED AT 02053000
        02109000  02260000
UNIT  --  REAL ARRAY  --  DECLARED AT 00209000
        02061000  02077000 *02097000**02097400* 02267000 *02270500* 02293000 *02301000* 04022000  04032000 *04036200*
        04048800 *04062000* 04117000 *04120000* 04129000 *04154000* 04203000 *04295400**04296600* 04372400 *04377600*
        04378000  04378400  04378800 *04383800**04397200**04432200**04432600* 04561000 *04563000* 04567000  04569100
        04569200  04570000  04651000  04671750 *04671900* 04672100  04673750  04682250 *04682350**04682450**04685900*
        04688050  07062000 *07065000* 15114700  22033000 *22034000**22090000* 22105000 *22204000* 22213700  37046840
        37047650  37173000  37189500  37323300 *37329000**37331000* 38115100  44168200 *44191005* 44191010  44191015
        48117200 *48118000*
UNIT  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02347210
        02347200  02347210 *02347230* 02347250  02347260  02347280  02347290  02347300  02347315  02347325  02347330
        02347340  02347430  02347450
UNIT  --  REAL  --  DECLARED AT 12503000
        12522000  12522500  12527000  12527500  12528400  12528500  12529500  12530000  12531000  12535500 *12538500*
        12539000  12545500  12546500  12615500  12626750  12648500 *12670000* 12670250  12670500 *12675500* 12676500
        12687000  12687300  12687700  12688000  12700000  12701000  12706000  12711000  12715500  12716500  12720000
        12740500
UNIT  --  REAL  --  DECLARED AT 12803000
        12892500
UNIT  --  REAL  --  DECLARED AT 13004000
        13037000  13039000  13062000  13101000
UNITCODE  --  REAL ARRAY  --  DECLARED AT 02347100
        02347325 *07232500* 07409250 *07409300**08434400**20595200* 20602200 *20602250* 20602400 *20603580**20605820*
       *20608500* 20609400  44178100 *44201120*
UNITF  --  DEFINE  --  DECLARED AT 12516150
        12670000  12675500
UNITF  --  DEFINE  --  DECLARED AT 12815200
UNITI  --  LABEL  --  DECLARED AT 20597800  --  OCCURS AT 20606800
        20598000
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UNITIN  --  REAL PROCEDURE  --  DECLARED AT 02348000
        *02358000* 02359000  07475000  08003000  08420000  08483000  08548000  08578000  16204000  16263100
UNITL   --  LABEL  --  DECLARED AT 44019000  --  OCCURS AT 44191150
         44191015
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00452000
         00451800  00451900
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
         00454000  00454100
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02132500
         02132300  02132400 *02133300**02133380* 02173075 *02173080* 02173085  02173087  02173090  02173095  02173265
         02173360  02173364  02173366  02173370  02173375
UNITNO  --  DEFINE  --  DECLARED AT 04261300
         04352200
UNITNO  --  DEFINE  --  DECLARED AT 04356900
         04376600  04383400  04386800  04393000  04404800  04416400
UNITNO  --  DEFINE  --  DECLARED AT 04554900
         04567600  04567830  04568590  04648000
UNITNO  --  DEFINE  --  DECLARED AT 04671000
         04672700  04673150  04674850  04675250  04683800  04686350  04687050
UNITNO  --  REAL  --  DECLARED AT 06185100
        *06205010* 06206120  06206250  06328200  06328300
UNITNO  --  DEFINE  --  DECLARED AT 07486500
         07511000
UNITNO  --  DEFINE  --  DECLARED AT 08528500
         08544700
UNITNO  --  DEFINE  --  DECLARED AT 08734500
         08784000  08798500
UNITNO  --  DEFINE  --  DECLARED AT 08854500
         08901000  08947200  08947400
UNITNO  --  DEFINE  --  DECLARED AT 15112900
         15114300  15115900
UNITNO  --  DEFINE  --  DECLARED AT 15402500
         15437100
UNITNO  --  REAL  --  DECLARED AT 16696650
        *16713500**16902650* 16902800
UNITNO  --  DEFINE  --  DECLARED AT 16913000
         16956090
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400
         17000000  17000200  17005400
UNITNO  --  REAL  --  DECLARED AT 18199100
        *18272300* 18438180  18438190  18438195  18439125
UNITNO  --  DEFINE  --  DECLARED AT 20020120
         20034000
UNITNO  --  DEFINE  --  DECLARED AT 20086800
         20118370
UNITNO  --  DEFINE  --  DECLARED AT 20146420
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20289020
         20289010  20289020  20289144  20289154  20289160  20289163  20289540
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20292200
         20292000  20292100 *20294800* 20295000  20296100  20297000  20299000  20299020  20299110
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20314200
         20314000  20314100  20323000  20325000  20364000  20374000  20374100  20374200  20374310  20374400  20374410
         20374430
UNITNO  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 20386000
         20384000  20385000  20397200  20489100  20489200  20489300
UNITNO  --  REAL  --  DECLARED AT 20566100
         20566790  20566900  20569420  20569440  20574910  20577826
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UNITNO  --  REAL  --  DECLARED AT 20581000
UNITNO  --  REAL  --  DECLARED AT 20584000
        20584200  20584800  20584900  20584950  20585050  20585100  20585125  20585620
UNITNO  --  REAL  --  DECLARED AT 20586800
        20587100  20587700  20587850
UNITNO  --  REAL  --  DECLARED AT 20589800
        20590000
UNITNO  --  REAL  --  DECLARED AT 20591000
        20591400  20592800  20594400  20594500
UNITNO  --  REAL  --  DECLARED AT 20595000
        20595200  20595250  20595300  20595350  20595400  20595450  20595500  20595550  20595560  20595650  20595700
        20595900  20596150  20596200  20596300  20596350  20596400  20596450
UNITNO  --  REAL  --  DECLARED AT 20596800
UNITNO  --  REAL  --  DECLARED AT 20600010
        20600040  20600160  20600400  20600480 *20600850* 20601000  20601100  20601150  20602050  20602200  20602250
        20602300 *20602350* 20602400  20602490  20602510  20602520  20602530  20603560  20603580  20604850  20605050
        20605410  20605440  20605520  20605820  20606900  20606910  20606920  20607020  20607040  20607500  20607700
        20607750  20608070  20608120  20608140  20608200  20608460  20608500  20608510  20608520  20608550  20608600
        20608650  20608700  20608790  20608840  20608850  20608870  20608950  20609000  20609100  20609150  20609400
        20609420  20609430  20609435  20609560  20609570  20609580  20609660  20609750  20610500
UNITNO  --  REAL  --  DECLARED AT 20701500
        20706000
UNITNO  --  REAL  --  DECLARED AT 28004000
        28004400
UNITNO  --  REAL  --  DECLARED AT 28204400
        28204800
UNITNO  --  REAL  --  DECLARED AT 28401600
       *28456600*
UNITNO  --  REAL  --  DECLARED AT 32000250
       *32001500* 32002300
UNITNUM  --  DEFINE  --  DECLARED AT 20566640
        20567274  20567280  20569522  20569846  20569860  20570350  20570464
UNITNUM  --  DEFINE  --  DECLARED AT 28007300
        28028110  28070200  28097800
UNITNUM  --  DEFINE  --  DECLARED AT 28207700
        28254200  28270814  28280800  28281000  28304600
UNITNUM  --  DEFINE  --  DECLARED AT 28407500
        28444100  28465400
UNITNUM  --  DEFINE  --  DECLARED AT 37007300
        37022000  37113000  37113100
UNITNUM  --  DEFINE  --  DECLARED AT 37180800
        37187100  37224200
UNKNOWNAREAV  --  DEFINE  --  DECLARED AT 00017190
UNLABELED  --  DEFINE  --  DECLARED AT 37180700
        37235000  37242000  37248500
UNLABELED  --  INTEGER  --  DECLARED AT 38005000
       *38023000*
UNLABELED  --  INTEGER  --  DECLARED AT 38102500
        38113000  38124500 *38144500*
UNLABELED  --  INTEGER  --  DECLARED AT 38200500
       *38237000**38260500* 38262000
UNLABELED  --  INTEGER  --  DECLARED AT 38360000
UNLABELED  --  INTEGER  --  DECLARED AT 38545000
        38591000  38628000
UNLABELED  --  INTEGER  --  DECLARED AT 38653000
        38736000  38742000  38754100  38761000
UNLABELED  --  INTEGER  --  DECLARED AT 39003000
```

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      *39090000**39237000**39241000**39293200* 39294000  39307200
UNLABELED  --  INTEGER  --  DECLARED AT 41002000
      *41044000* 41206000
UNLD  --  LABEL  --  DECLARED AT 22064000  --  OCCURS AT 22200000
       22065000  22176000
UNLOAD  --  DEFINE  --  DECLARED AT 20223000
       20569529  20569610  20569802  20569840  20570120
UNLOAD  --  DEFINE  --  DECLARED AT 28208200
       28307715
UNLOCKCONTROLDECKS  --  DEFINE  --  DECLARED AT 07001300
       07296000  07352000  07371600  07371950  07427625  07455000
UNLOCKDIRECTORY  --  DEFINE  --  DECLARED AT 00421500
       06116000  06463992  07568000  08259575  08270650  14569000  14618000  18023000  18425200  18466000  20760000
       20769200  20771020  40336000
UNLOCKHDR  --  DEFINE  --  DECLARED AT 18201500
UNLOCKTOG  --  DEFINE  --  DECLARED AT 00079400
       02202500  02434530  05846395  05853600  05970500  05975610  06116000  06116100  06353500  06463992  07001840
       07296000  07352000  07371600  07371950  07427625  07455000  07568000  07572000  08259575  08270650  08388000
       08571600  08677000  08696100  08836000  08997000  09624000  09647000  09682620  14396000  14569000  14618000
       18023000  18425200  18466000  18843700  18845500  19786000  20120600  20210300  20583650  20760000  20769200
       20771020  22030000  22920000  24043800  40336000  41320355
UNLOCKV  --  DEFINE  --  DECLARED AT 20219050
       20511450  20511662  20511664  20593060  20593100  20602800  20603600  20604350
UNLOK  --  STREAM LABEL  --  DECLARED AT 08110600  --  OCCURS AT 08111150
UNLOX  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606150
       20597900
UNSYS  --  LABEL  --  DECLARED AT 18207000  --  OCCURS AT 18397000
       18219000
UNUM  --  DEFINE  --  DECLARED AT 00005210
UNUSED  --  LABEL  --  DECLARED AT 18208000  --  OCCURS AT 18466101
       18220000
UP  --  LABEL  --  DECLARED AT 06351500  --  OCCURS AT 06380150
       06353570  06380700
UP  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28258600
       28260200  28302200
UP  --  LABEL  --  DECLARED AT 28402800  --  OCCURS AT 28460200
       28464800
UPDATE  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 07001600
       07001780
UPDATE  --  LABEL  --  DECLARED AT 20391000  --  OCCURS AT 20483000
       20395000
US  --  STREAM VARIABLE  --  DECLARED AT 08839000
US  --  LABEL  --  DECLARED AT 18701000  --  OCCURS AT 18710600
       18701200
USASI  --  REAL  --  DECLARED AT 14624550
      *14702550* 14702600
USASI  --  INTEGER  --  DECLARED AT 37180300
      *37255900* 37267050
USASI  --  REAL  --  DECLARED AT 38103200
      *38136500* 38137000
USASI  --  REAL  --  DECLARED AT 38201200
USASITAPE  --  PROCEDURE  --  DECLARED AT 01250100
       01261500  14702600  22145550  37255900  38137000
USE  --  REAL  --  DECLARED AT 06068400
      *06093700* 06094200  06094700  06096400 *06101100* 06101200  06101600  06101700 *06110400**06111300* 06112000
USEDRA  --  DEFINE  --  DECLARED AT 00403000
USEDRB  --  DEFINE  --  DECLARED AT 00404000
```

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USEPBD  --  DEFINE  --  DECLARED AT 00416600
        39092070  39092150
USER  --  REAL  --  DECLARED AT 06462100
       *06465100* 06465210  06465220  06465300  06465500  06465830  06465880
USER  --  DEFINE  --  DECLARED AT 20219400
        20603565
USERCODE  --  REAL ARRAY  --  DECLARED AT 02695000
        04105550  06203000 *06205100* 14534500  14541000  14569200  18520900  18522300  18524900  18526300  18528100
        18553500  18710600  19699000  19768200  19774850 *20180400*  22917000  28282800  28283000  28416400  28416600
        28435200  37428100  38013010  38013040  38077000  38217000  38253100  38490000  38513000  44162100 *44255000*
       *44262500* 44264500  44268500 *44270000**44276000* 45107000  45122000 *45123000*
USERDISK  --  REAL ARRAY  --  DECLARED AT 00419900
USERDISKBOTTOM  --  REAL  --  DECLARED AT 00418000
        05844930  05849000  05850120  05961400  06109500  06380450  06380900  16827000  40321000  40321300 *44086200*
        44086300
USERDISKMASK  --  DEFINE  --  DECLARED AT 00080600
        05842300  05846395  05849300  05853600  05960700  05970500  05975610  06103700  06116100  06353500  40336100
        45102000
USERDISKREADY  --  DEFINE  --  DECLARED AT 00080600
USERDISKSPECIALCASE  --  PROCEDURE  --  DECLARED AT 06350000  --  FORWARD AT 00336100
        05844110  05849460  05851600  05971400  06381550
USERID  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06460200
        06460000  06460100  06463910  06463920  06465300
USERID  --  REAL  --  DECLARED AT 07408100
       *07409250* 07418850
USERID  --  REAL  --  DECLARED AT 08099800
       *08102000* 08104550  08105500  08106020  08106040
USERID  --  REAL  --  DECLARED AT 20566100
        20575350  20575400  20578050  20578075
USERID  --  REAL  --  DECLARED AT 20581000
USERID  --  REAL  --  DECLARED AT 20584000
        20586500
USERID  --  REAL  --  DECLARED AT 20586800
        20588100  20588500
USERID  --  REAL  --  DECLARED AT 20589800
USERID  --  REAL  --  DECLARED AT 20591000
       *20591700* 20592400  20592900  20593320  20593600
USERID  --  STREAM VARIABLE  --  DECLARED AT 20592400
        20592450
USERID  --  REAL  --  DECLARED AT 20595000
        20595200
USERID  --  REAL  --  DECLARED AT 20596800
USERID  --  REAL  --  DECLARED AT 20600010
       *20602300**20602400* 20603570 *20603575* 20603580  20605750 *20605810* 20605820 *20609400**20609436*
USERID  --  REAL  --  DECLARED AT 20701500
        20740000  20741000
USERS  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20605700
        20597900
USERSTA  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14531100
        14531000  14540100  14540350
USES  --  LABEL  --  DECLARED AT 20597750  --  OCCURS AT 20606050
        20597900
USETOG  --  REAL  --  DECLARED AT 12211500
       *12247000* 12248500 *12258000**12259000* 12293500  12294500  12310000
USETOG  --  STREAM VARIABLE  --  DECLARED AT 12310000
        12317500
USEV  --  DEFINE  --  DECLARED AT 20219060
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          20511295  20511312  20593900  20594600
UT  --  REAL ARRAY  --  DECLARED AT 05841620
        *05844110**05844930* 05845000 *05845300* 05845500  05845700
UT  --  REAL ARRAY  --  DECLARED AT 05847600
        *05850120* 05850300  05850400  05850500  05850600  05851300 *05851500* 05851600  05851700  05851800  05851900
        *05852000**05852500*
UT  --  REAL ARRAY  --  DECLARED AT 05952400
        *05961400* 05962000  05962200  05962400  05962600  05962800 *05966600* 05967600  05968200  05968600  05968900
         05969200  05971400  05972000 *05972400**05972600**05972800* 05973600 *05973800* 05974400  05974800
UT  --  REAL ARRAY  --  DECLARED AT 06069300
         06088300  06089000  06089100  06089300 *06091500**06099400**06099500**06100800* 06100900  06101100 *06109400*
         06110700  06110800  06110900  06111000  06111700  06111800 *06113400*
UT  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 06350300
         06350000  06351000  06380140
UT  --  REAL ARRAY  --  DECLARED AT 16697200
        *16827100* 16828000
UVROWAREAV  --  DEFINE  --  DECLARED AT 00017370
U1  --  REAL  --  DECLARED AT 04259200
U1  --  LABEL  --  DECLARED AT 20589720  --  OCCURS AT 20590300
         20590200
V   --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 02696300
V   --  REAL  --  DECLARED AT 04068000
         04078000  04080000  04081000  04095000  04097000
V   --  REAL  --  DECLARED AT 04126000
        *04130000* 04133000  04137215  04144000 *04147000**04151000* 04154000  04159000 *04207000* 04208000 *04210000*
         04213000 *04218000*
V   --  STREAM VARIABLE  --  DECLARED AT 04659000
         04659800 *04661800*
V   --  LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05849500
         05851675
V   --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05959200
         05960600  05960670
V   --  STREAM VARIABLE  --  DECLARED AT 06381395
         06381405
V   --  REAL  --  DECLARED AT 07299000
        *07318000* 07319000  07320000 *07344000* 07345000
V   --  INTEGER  --  DECLARED AT 08255200
         08256440  08256450 *08257500**08257600**08258000* 08258200  08259225  08259830  08259840  08259850 *08260500*
         08268500  08269510  08269520  08270750  08272000  08280000  08280030
V   --  STREAM VARIABLE  --  DECLARED AT 08448050
         08448100
V   --  STREAM VARIABLE  --  DECLARED AT 08451100
         08451200
V   --  STREAM VARIABLE  --  DECLARED AT 08454000
         08454500
V   --  REAL  --  DECLARED AT 12503000
         12567500  12600500  12607000  12656000  12657000 *12667750* 12669500  12670500  12671250  12675000  12675250
         12677500  12679500  12700500  12701000  12705500  12707750  12753500  12755500  12757500
V   --  REAL  --  DECLARED AT 12803000
         12823000  12843000  12843500  12843600  12843700  12860100  12873500  12874500  12875000  12875500  12876000
        *12876500* 12878000  12886000  12890100  12892000  12897500
V   --  REAL  --  DECLARED AT 13004000
         13127899  13128000
V   --  STREAM VARIABLE  --  DECLARED AT 14415100
         14418100
V   --  REAL  --  DECLARED AT 19900260
        *19900300* 19900310 *19900320* 19900330 *19900745* 19900755  19900760  19900780  19900800
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V  --  REAL  --  DECLARED AT 37287500
       *37293220**37293230**37293240**37293250**37293260* 37293270
V  --  REAL ARRAY  --  DECLARED AT 40006000
        40007000 *40010000**40011000**40012000**40013000* 40014000 *40263000* 40293050 *40293060**40293070**40293080*
       *40293090* 40293110  40293120  40317210  40317230  40317300
VADAR  --  REAL ARRAY  --  DECLARED AT 39902000
       *39959000* 39962000  39965000  39966000
VALU  --  REAL  --  DECLARED AT 12212000
        12225000 *12244500* 12249500  12261000  12262000  12262500  12265500  12266500  12269500  12283000  12286500
        12287000  12307000
VALU  --  STREAM VARIABLE  --  DECLARED AT 12225000
        12241500
VALU  --  STREAM VARIABLE  --  DECLARED AT 12307000
        12312000
VALU  --  REAL  --  DECLARED AT 12363500
       *12438000* 12439000
VALUTOG  --  STREAM VARIABLE  --  DECLARED AT 12307000
        12312000
VARRAY  --  REAL  --  DECLARED AT 19694000
       *19696800* 19697300 *19725000* 19755000 *19763000*
VASE  --  REAL  --  DECLARED AT 08680000
        08681200 *08689900* 08690600  08693000 *08693200* 08694200  08695200  08695400
VASE  --  STREAM VARIABLE  --  DECLARED AT 08681200
        08686500
VASE  --  STREAM VARIABLE  --  DECLARED AT 08694200
VAX  --  DEFINE  --  DECLARED AT 00013710
        18540140  18540400
VCC  --  DEFINE  --  DECLARED AT 00013820
        16043680  16926020
VCT  --  DEFINE  --  DECLARED AT 08734010
VECTOR  --  REAL ARRAY  --  VALUE PARAMETER  --  DECLARED AT 06182000
        06180000  06181000  06192000  06193500  06194000  06195105  06195120  06196000  06199000  06200000  06201000
        06206120  06206140  06206240  06206250  06207000  06207100  06208000  06217100  06222000  06222100  06222200
        06222300  06222400  06222500  06222550  06246000  06328300  06328400  06328500
VECTOR  --  REAL ARRAY  --  DECLARED AT 14350000
       *14358000* 14358100  14358200  14358310  14358315  14358391  14358710 *14358800* 14360100  14360200  14360310
        14360380  14371000  14372000  14373000  14374000  14382000  14383900  14391000  14394000  14395000  14398700
        14399000  14402000 *14403900* 14404000  14405000  14406000 *14406100* 14407100  14408000 *14410000* 14411800
        14411850  14411860  14411870  14411880  14411890  14414000  14415000  14415100  14430800  14431000
VERYFIRST  --  REAL  --  DECLARED AT 07006172
       *07105500* 07115100  07117100 *07118510**07119200* 07120010  07123500 *07126000**07129200* 07140100 *07169110*
        07214100
VF  --  DEFINE  --  DECLARED AT 12516100
        12667750
VF  --  DEFINE  --  DECLARED AT 12815100
VFM  --  DEFINE  --  DECLARED AT 00013790
        12830000  12863000  16244000  37046740  37046825  37046830  37047010  37047600  37048000
VFR  --  DEFINE  --  DECLARED AT 00013800
        37225100
VIF  --  DEFINE  --  DECLARED AT 00013830
        18025000  18258000  28293200
VIL  --  DEFINE  --  DECLARED AT 00013720
        06463280  37225000  37233500  37241300  37241510  37241600
VOF  --  DEFINE  --  DECLARED AT 00013810
        28293400  28294400  37225100  38014610  38015400
VOK  --  DEFINE  --  DECLARED AT 00013780
        06360520  06360590  06463280  12473190  12709750  12830000  12899500  12900500  14431518  14569500  16163000
```

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        17914100  17914500  17918500  28293400  28294200  37046829  37047010  37047100  37225000  37233250  37241300
        37241600  38014610  38015400
VOL  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01256100
        01257600
VOLIFILL  --  SUBROUTINE  --  DECLARED AT 01251000
        01251600  01255000  01256000  01257500
VOU  --  DEFINE  --  DECLARED AT 00013750
        37046740  37046825  37047010
VQ  --  LABEL  --  DECLARED AT 16355000  --  OCCURS AT 16456000
        16364000
VQT  --  DEFINE  --  DECLARED AT 00013740
        12709750  12830000  12899500  12900500
VR  --  REAL ARRAY  --  DECLARED AT 40007000
       *40249250**40257060* 40261300 *40265000**40317500**40321130**40324200**40334077**40334079**40334085*
VRM  --  DEFINE  --  DECLARED AT 00013770
        14569500  14581700  14585000
VTL  --  DEFINE  --  DECLARED AT 08734030
        08736000
VUL  --  DEFINE  --  DECLARED AT 00013730
        37225000
VWY  --  DEFINE  --  DECLARED AT 00013760
        06360520  06360590  06463280  08602000  08609000  12709750  12830000  12899500  12900500  14569500  16108000
        16163000  16953000  17914500  17917500  17918500  18025000  18540140  18540400  22014640  28293200  37046740
        37046825  37047010  37048000  37085000  37100000  37113000  37225000  37241300  37241600  38014610
VXT  --  DEFINE  --  DECLARED AT 08734020
        08757000  08775000
V1  --  STREAM VARIABLE  --  DECLARED AT 12460500
        12469000
V10  --  STREAM VARIABLE  --  DECLARED AT 12465000
V11  --  STREAM VARIABLE  --  DECLARED AT 12465500
V12  --  STREAM VARIABLE  --  DECLARED AT 12466000
V13  --  STREAM VARIABLE  --  DECLARED AT 12466500
V14  --  STREAM VARIABLE  --  DECLARED AT 12467000
V2  --  STREAM VARIABLE  --  DECLARED AT 12461000
V3  --  STREAM VARIABLE  --  DECLARED AT 12461500
V4  --  STREAM VARIABLE  --  DECLARED AT 12462000
V5  --  STREAM VARIABLE  --  DECLARED AT 12462500
V6  --  STREAM VARIABLE  --  DECLARED AT 12463000
V7  --  STREAM VARIABLE  --  DECLARED AT 12463500
V8  --  STREAM VARIABLE  --  DECLARED AT 12464000
V9  --  STREAM VARIABLE  --  DECLARED AT 12464500
W  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00480010
W  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 02696300
W  --  SWITCH LABEL  --  DECLARED AT 04358400
        04389000
W  --  REAL  --  DECLARED AT 04552000
        04568400 *04593000* 04598000 *04608000* 04627000
W  --  REAL  --  DECLARED AT 04704000
       *04706000**04731000* 04732000
W  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 05607000
        05614000
W  --  STREAM VARIABLE  --  DECLARED AT 05614000
        05617000
W  --  NAME  --  VALUE PARAMETER  --  DECLARED AT 05701000
        05700000  05701000 *05715100* 05725000  05727000  05728180
W  --  LABEL  --  DECLARED AT 05841650  --  OCCURS AT 05846500
        05842100
```

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W  --  LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05850400
        05850400  05850500
W  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05962200
        05952715  05952755  05962400
W  --  STREAM VARIABLE  --  DECLARED AT 05952715
        05952725
W  --  STREAM VARIABLE  --  DECLARED AT 05952755
W  --  STREAM VARIABLE  --  DECLARED AT 06381400
        06381405
W  --  STREAM VARIABLE  --  DECLARED AT 14284000
        14286000
W  --  REAL ARRAY  --  DECLARED AT 19692000
       *19711100* 19711300  19714000  19714100  19724000  19727000  19760000  19766800
W  --  STREAM VARIABLE  --  DECLARED AT 20031500
        20032925
W  --  REAL  --  DECLARED AT 28003200
        28078000  28078400  28078800  28079000  28080000  28080400  28080600  28080800 *28095800* 28096200  28096600
        28096800
W  --  REAL  --  DECLARED AT 28203600
        28234800  28235200  28235400  28236000  28236200  28236400  28237200 *28240400**28241600* 28241800  28242000
        28242400  28243400  28244200  28245000  28245200  28267000  28268600 *28278400* 28278600 *28278800* 28279200
       *28289200**28289600**28289800**28290000* 28290200  28290400  28290600 *28294800* 28295000  28295200  28295400
       *28299800**28300000* 28300200  28300400  28300600
W  --  REAL  --  DECLARED AT 28803000
        28831000  28831600  28832000  28832500  28833000 *28837000**28838500* 28848000 *28850000* 28852100
W  --  INTEGER  --  DECLARED AT 37422100
       *37433000**37434000* 37435000
W  --  REAL  --  DECLARED AT 40005100
       *40008320**40008340**40275700**40353100* 40353120 *40353180* 40353200
W  --  REAL  --  DECLARED AT 44011000
        44018000 *44151700* 44173200
W  --  REAL  --  DECLARED AT 44206700
        44207200
W  --  REAL  --  DECLARED AT 45002000
        45002800
WAIT  --  LABEL  --  DECLARED AT 01250500  --  OCCURS AT 01260425
        01255600  01256500  01259300
WAIT  --  LABEL  --  DECLARED AT 20597880  --  OCCURS AT 20609555
        20598000
WAITIO  --  REAL PROCEDURE  --  DECLARED AT 04240000  --  FORWARD AT 00018000
        00044000  01255100  01255200  01255450  01255500  01256100  01256400  01258500  01258600  01258700  01258900
        01260500  02120000  02276100  02287255  02287260  02308000  02434174  02434532  02434534  02434600  02434630
        02434760  02434770  02434800  02434810  02666000  02668000 *04250000* 05960600  05960660  07051110  07059000
        07077000  07125000  07128000  07224000  07227000  08030000  08042000  08043000  08044000  08044600  08045000
        08087000  12522000  12522500  12527000  12545500  12546500  12600500  12607000  12648500  12843000  12843600
        12843700  12890100  12897500  13062000  13128000  14204600  14205500  14255000  14256000  14679000  14701000
        14703000  16921500  20299000  20601000  20608000  20609000  22106000  22107000  22112000  22112100  22112500
        22114000  22203000  28011840  28011850  28012040  28019800  28021800  28022000  28033400  28033800  28034000
        28041000  28041400  28042600  28044800  28046000  28047000  28058800  28063000  28063200  28074600  28077200
        28078000  28078800  28082000  28082200  28082400  28086800  28089200  28090200  28090400  28091800  28095000
        28095400  28213000  28216400  28216600  28222600  28223000  28223200  28230000  28232200  28232600  28256400
        28256800  28258400  28262200  28273000  28303200  28304600  37046260  37046300  37212000  37253000  37303200
        37453100  37456000  37458000  38105400  38142000  38203400  38402000  38406000  38411750  38624000  38629000
        38632000  38688000  38700000  38720000  38736000  38741000  38741100  38742000  38742100  38754000  38755000
        38760000  38766000  38767000  38769000  38775000  38795000  38799000  40257030  40258000  45104200
WAITQUE  --  REAL ARRAY  --  DECLARED AT 00278000
        02092000 *02094000* 02095000 *04016200**04017000* 04117000  44173000
```

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WAITV -- DEFINE -- DECLARED AT 20226100
WATE -- LABEL -- DECLARED AT 28210800 -- OCCURS AT 28241400
        28245200
WATE -- LABEL -- DECLARED AT 28806000 -- OCCURS AT 28848000
WC -- REAL -- DECLARED AT 41600300
       *41602900* 41603000 41607300
WD -- LABEL -- DECLARED AT 16355000 -- OCCURS AT 16493000
        16364000
WD -- LABEL -- DECLARED AT 18701000 -- OCCURS AT 18711600
        18701200
WD -- REAL -- DECLARED AT 41327500
        41327700 *41334200*
WDSLEFT -- STREAM VARIABLE -- DECLARED AT 04658800
        04661800
WEEKDAY -- REAL -- DECLARED AT 08303300
        08332500 08333000 18711600 20289265 *44241150*
WEEKDAY -- STREAM VARIABLE -- DECLARED AT 20289265
WEGOTAFILE -- REAL SUBROUTINE -- DECLARED AT 08104750
        08104950 08105000 08116750
WEIRDFORK -- DEFINE -- DECLARED AT 28405000
        28433400 28441200 28442200
WEWANTTHISFILE -- REAL SUBROUTINE -- DECLARED AT 08105100
        08105500 08105900 08106040 08106080 08106100 08116800
WHAT -- REAL -- VALUE PARAMETER -- DECLARED AT 02348000
        02350000
WHAT -- STREAM VARIABLE -- DECLARED AT 02350000
        02351000
WHAT -- REAL -- DECLARED AT 08028000
        08029000
WHAT -- REAL -- VALUE PARAMETER -- DECLARED AT 08079000
        08080000
WHATINTRNSIC -- PROCEDURE -- DECLARED AT 15534000 -- FORWARD AT 09400000
        09535000 09659000 15555000 16261000
WHATMCP -- PROCEDURE -- DECLARED AT 15500000
        15533000 16503100 41323500
WHILOOP -- LABEL -- DECLARED AT 14628000
WHY -- LABEL -- DECLARED AT 06351500 -- OCCURS AT 06355000
        06360610
WHY -- LABEL -- DECLARED AT 06462200 -- OCCURS AT 06463210
        06463360
WHY -- LABEL -- DECLARED AT 12812500 -- OCCURS AT 12898500
        12892000 12900500
WHY -- LABEL -- DECLARED AT 14547000 -- OCCURS AT 14570000
        14584000
WHY -- LABEL -- DECLARED AT 37180600 -- OCCURS AT 37224000
        37222500 37229500
WHYSLEEP -- REAL PROCEDURE -- DECLARED AT 08599000 -- FORWARD AT 02022000
        06360590 06463360 *08622500* 08623000 12710250 12862000 12900500 14584000 17918500 18030000 18540400
        28294000 36008000 37046825 37229500 37241600
WI -- REAL -- DECLARED AT 09602100
WI -- REAL -- DECLARED AT 15536000
WI -- LABEL -- DECLARED AT 16056000 -- OCCURS AT 16260000
        16065000
WINDUP -- LABEL -- DECLARED AT 20146600 -- OCCURS AT 20189900
        20188900
WITCHINGHOUR -- REAL -- DECLARED AT 00157500
        06188000 06188100 15622000 20157700 22012000 22909000 *44090500* 48002000
```

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WITH -- DEFINE -- DECLARED AT 20235099
        20585300  20593310
WITHOUT -- LABEL -- DECLARED AT 09602000
WK -- LABEL -- DECLARED AT 16357000 -- OCCURS AT 16615100
        16366000
WKSETCLOCK -- DEFINE -- DECLARED AT 00134150
        12405500  48010074  48010080
WKSETCYCLETIME -- DEFINE -- DECLARED AT 00134350
        12270500  12279000  12280000  12280500  12281000  12283000  12283500  12306000  12306500  12321120  44209200
        48010072  48010074
WKSETDATA -- REAL ARRAY -- DECLARED AT 00134130
        06195095  08839500 *12262500**12266500* 12270500 *12271500* 12272000 *12273000**12276000**12276500**12279000*
       *12280000* 12280500  12281000 *12283000**12283500**12287000**12296500* 12297500  12306000  12306500  12307500
        12308000  12309000  12321120  12321130  12321140  12321150  12403500 *12405500* 12424700 *12425000* 12425200
        12426500  12431500  12444500 *12452500**12453000**12453100* 12454000 *12454500* 12456500  12473030  12473040
       *12473060* 12473070  12473080 *12473150**12475500* 14431420 *14431440* 14431450  14431460 *14431470**14431508*
       *14431650**14431975* 14431980  17904000 *17904600**17926100**17926500* 20165120 *20190620* 22014620  44163020
       *44209200**44209300**44209400**44209500* 48010072  48010074  48010076 *48010080**48010084*
WKSETDATASIZE -- DEFINE -- DECLARED AT 00134480
        44151052  44163020
WKSETINSTRUCT -- DEFINE -- DECLARED AT 00134310
        12272000  12273000  12296500  12297500  12321130  12431500  44209300
WKSETMAXDLAY -- DEFINE -- DECLARED AT 00134250
        12266500  12276500  12307500  12321150  12425000  12426500  12473040  44209500
WKSETMONITOR -- DEFINE -- DECLARED AT 00134230
        06195095  12287000  12309000  12456500
WKSETNOSELECT -- DEFINE -- DECLARED AT 00134200
        08839500  12283500  12424700  12425000  12425200  12453100  14431975  20165120
WKSETOLERANCE -- DEFINE -- DECLARED AT 00134280
        12262500  12276000  12308000  12321140  12444500  44209400
WKSETRUNNING -- DEFINE -- DECLARED AT 00134180
        12475500  48010076  48010084
WKSETSTOPJOBS -- DEFINE -- DECLARED AT 00134390
        12453000  12473030  12473150  14431420  14431508  14431975  14431980  17904000  17926500  20165120  22014620
WKSETSWITCHTIME -- DEFINE -- DECLARED AT 00134460
        12403500  12452500  14431650  17904600  17926100  20190620
WKSETVALUES -- PROCEDURE -- DECLARED AT 12201000
        16615200
WLOG -- REAL -- DECLARED AT 41327500
        41327700 *41334100*
WM -- LABEL -- DECLARED AT 16356000 -- OCCURS AT 16502000
        16364000
WMCP -- REAL -- DECLARED AT 41327500
       *41334000*
WORD -- REAL -- DECLARED AT 05952230
        05952715  05952755  05956550  05956600  05956750  05957050  05957150 *05957250* 05957500 *05977600*
WORD -- INTEGER -- DECLARED AT 24204000
       *24213000* 24224000  24226000
WORDOFFASE -- REAL -- DECLARED AT 00157500
        20190800 *44091000* 44189500  48024000
WORDS -- INTEGER -- VALUE PARAMETER -- DECLARED AT 24103000
        24101000  24102000  24151000
WORKSET -- PROCEDURE -- DECLARED AT 12350500 -- FORWARD AT 00134125
        48010082
WP -- LABEL -- DECLARED AT 16699500 -- OCCURS AT 16719500
        16703500
WR -- LABEL -- DECLARED AT 16699500 -- OCCURS AT 16737500
```

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        16703500
WRAP  --  LABEL  --  DECLARED AT 14165000  --  OCCURS AT 14298000
        14279000
WRDCNT  --  STREAM VARIABLE  --  DECLARED AT 04658600
        04660200 *04661500*
WRDERR  --  STREAM VARIABLE  --  DECLARED AT 04658600
       *04660000* 04662500
WRDLOCN  --  STREAM VARIABLE  --  DECLARED AT 04659400
        04660300
WRDSZ  --  REAL ARRAY  --  DECLARED AT 28004800
       *28069200*
WRDSZ  --  REAL ARRAY  --  DECLARED AT 28205200
       *28235200* 28243400
WRDSZ  --  REAL ARRAY  --  DECLARED AT 28401800
WRITBACK  --  DEFINE  --  DECLARED AT 38385500
        38389200
WRITEAFTEREOF  --  DEFINE  --  DECLARED AT 38385600
        38389400  38389700  38389800  38390100  38390500
WRITER  --  SUBROUTINE  --  DECLARED AT 12603000
WRITEBANDEJECT  --  SUBROUTINE  --  DECLARED AT 12838500
        12885500  12890000
WRITENDINGLABEL  --  SUBROUTINE  --  DECLARED AT 28040600
        28045000  28075000
WRITENDINGLABEL  --  SUBROUTINE  --  DECLARED AT 28231800
        28261200  28268800
WRITEPARITYREELSWITCH  --  REAL PROCEDURE  --  DECLARED AT 04667000  --  FORWARD AT 04255100
        04648150 *04688050* 04688100  15115200
WRITTENON  --  REAL SUBROUTINE  --  DECLARED AT 38377000
        38378400  38503600  38507500
WT  --  LABEL  --  DECLARED AT 16356000  --  OCCURS AT 16499000
        16364000
WT  --  REAL  --  DECLARED AT 41327400
        41333005 *41333900*
WU  --  LABEL  --  DECLARED AT 16699500  --  OCCURS AT 16715000
        16703500
WY  --  LABEL  --  DECLARED AT 16054000  --  OCCURS AT 16102000
        16062000
WY  --  LABEL  --  DECLARED AT 28210800  --  OCCURS AT 28291000
        28294000
W1  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14531100
        14531000  14535000
W2  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 14531100
        14531000
W3  --  LABEL  --  DECLARED AT 37005000  --  OCCURS AT 37046680
        37046826  37046829
X  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 00379000
X  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 00454200
        00454000  00454100
X  --  STREAM VARIABLE  --  DECLARED AT 01251800
        01251900  01252000
X  --  REAL  --  DECLARED AT 02057000
        02057500 *02081000* 02087000  02101000  02101100
X  --  STREAM VARIABLE  --  DECLARED AT 02144500
        02145000
X  --  STREAM VARIABLE  --  DECLARED AT 02221000
        02245000
X  --  LABEL  --  DECLARED AT 02434135  --  OCCURS AT 02434870
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          02434240
X  --  LABEL  --  DECLARED AT 04125000  --  OCCURS AT 04159000
          04134900  04134960
X  --  LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05850600
          05850300
X  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05962600
          05962000
X  --  STREAM VARIABLE  --  DECLARED AT 06023000
X  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 06179000
X  --  STREAM VARIABLE  --  DECLARED AT 06269000
          06270000
X  --  STREAM VARIABLE  --  DECLARED AT 07003462
          *07003486* 07003488 *07003504* 07003508 *07003514* 07003518 *07003522* 07003526 *07003530* 07003534 *07003538*
          07003542 *07003546* 07003550 *07003554* 07003558 *07003562* 07003566 *07003570*
X  --  STREAM VARIABLE  --  DECLARED AT 07032000
          07035000 *07037000*
X  --  STREAM VARIABLE  --  DECLARED AT 07214100
          07214110
X  --  STREAM VARIABLE  --  DECLARED AT 07358000
          07360100  07362000
X  --  STREAM LABEL  --  DECLARED AT 07490000  --  OCCURS AT 07495000
X  --  LABEL  --  DECLARED AT 08002000  --  OCCURS AT 08023000
          08021000
X  --  REAL  --  DECLARED AT 08099850
          08105700  08105900  08107950  08108200  08108250 *08114300**08114350*
X  --  STREAM VARIABLE  --  DECLARED AT 08105700
X  --  STREAM VARIABLE  --  DECLARED AT 08107950
          08108050
X  --  STREAM VARIABLE  --  DECLARED AT 08108250
          08108500
X  --  STREAM VARIABLE  --  DECLARED AT 08298800
          08299400
X  --  STREAM VARIABLE  --  DECLARED AT 08318200
          08318300  08318400
X  --  STREAM LABEL  --  DECLARED AT 08348000  --  OCCURS AT 08357000
X  --  STREAM VARIABLE  --  DECLARED AT 08365000
          08365100  08365200
X  --  STREAM LABEL  --  DECLARED AT 08401000  --  OCCURS AT 08406000
X  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08527000
          08525000  08526000  08533400  08533500  08535000  08538000  08540000  08544700
X  --  STREAM VARIABLE  --  DECLARED AT 08540000
          *08540300* 08541000 *08543000**08544200*
X  --  STREAM VARIABLE  --  DECLARED AT 08551200
X  --  STREAM VARIABLE  --  DECLARED AT 08558000
X  --  REAL  --  DECLARED AT 08680000
          *08692400* 08692800  08694000  08694200
X  --  STREAM VARIABLE  --  DECLARED AT 08694200
          08694600
X  --  STREAM VARIABLE  --  DECLARED AT 08774000
          08780000
X  --  STREAM VARIABLE  --  DECLARED AT 08791000
          08792000
X  --  STREAM LABEL  --  DECLARED AT 08918000  --  OCCURS AT 08923000
X  --  REAL  --  DECLARED AT 12505000
          *12554500**12555000**12651000* 12652000
X  --  REAL  --  DECLARED AT 12805000
X  --  REAL  --  DECLARED AT 13006000
```

```
        *13061000* 13066000 *13068000**13072000* 13073000
X  --   STREAM VARIABLE  --  DECLARED AT 14020000
X  --   REAL  --  DECLARED AT 14164000
         14183000 *14184000**14186020* 14186120  14186130  14186140  14186148 *14197000**14198100* 14198200  14198300
         14198400  14198700  14198800 *14206000**14210000* 14211000  14216000  14217000 *14224000*
X  --   STREAM LABEL  --  DECLARED AT 14424000  --  OCCURS AT 14429000
         14427000
X  --   REAL ARRAY  --  DECLARED AT 14546000
         14551500  14552000  14552750  14554000  14555500 *14559250* 14594000  14595000 *14596000**14598300**14600000*
         14602500 *14603000* 14603200 *14603300**14603310* 14603600 *14604000*
X  --   STREAM VARIABLE  --  DECLARED AT 14645000
         14646000  14647200 *14650000* 14650400 *14650600* 14651000
X  --   STREAM VARIABLE  --  DECLARED AT 14702025
         14702050  14702100
X  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 15019000
         15021000 *15039000* 15040000
X  --   STREAM VARIABLE  --  DECLARED AT 15021000
         15031000 *15037000*
X  --   LABEL  --  DECLARED AT 15172000  --  OCCURS AT 15175900
         15173000
X  --   LABEL  --  DECLARED AT 15403000  --  OCCURS AT 15440000
         15438170
X  --   REAL  --  DECLARED AT 15501000
        *15501200* 15501300  15501600  15531100  15531200
X  --   STREAM VARIABLE  --  DECLARED AT 15550000
         15552400
X  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 17000400  --  OCCURS AT 16926154
         17000000  17000200  17005400
X  --   REAL  --  DECLARED AT 18198000
        *18227000* 18227500  18228000  18232000  18245000
X  --   STREAM VARIABLE  --  DECLARED AT 19768200
         19768300
X  --   STREAM VARIABLE  --  DECLARED AT 20064000
         20064300
X  --   REAL  --  DECLARED AT 20289035
        *20289335**20289370* 20289510  20289580
X  --   REAL  --  DECLARED AT 20382050
        *20382220* 20382260  20382360  20382380  20382440
X  --   REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20386100
         20384000 *20400000* 20415100 *20504000**20505000* 20507100 *20507400*
X  --   STREAM VARIABLE  --  DECLARED AT 20511663
         20511685  20511702
X  --   STREAM VARIABLE  --  DECLARED AT 20566915
         20566940
X  --   REAL  --  DECLARED AT 22002000
        *22042000* 22042100  22045000
X  --   STREAM VARIABLE  --  DECLARED AT 22136000
         22142000
X  --   STREAM VARIABLE  --  DECLARED AT 22145050
         22145350
X  --   REAL  --  DECLARED AT 22231000
         22261000 *22263000* 22264000 *22277000**22312000* 22315000  22317000 *22371220**22387000**22399000* 22400000
        *22423000* 22423100
X  --   REAL  --  VALUE PARAMETER  --  DECLARED AT 22900000
         22916000
X  --   REAL  --  DECLARED AT 24004000
        *24011000* 24012000
```

```
X  --  REAL  --  DECLARED AT 24032200
       *24033600* 24033900 *24034000**24035600* 24035700  24035800 *24036900* 24037200 *24037300* 24037600 *24038000*
        24038100 *24038900* 24039000 *24039100**24039700* 24039900
X  --  STREAM VARIABLE  --  DECLARED AT 24042700
        24042800
X  --  INTEGER  --  DECLARED AT 24207000
       *24212000* 24225000
X  --  REAL ARRAY  --  DECLARED AT 28004400
        28004600 *28058600* 28059600 *28062000* 28062200
X  --  REAL ARRAY  --  DECLARED AT 28401800
       *28458000**28466600* 28467000  28467600  28467800  28475800  28476400  28482000
X  --  REAL ARRAY  --  DECLARED AT 28804000
       *28856000**28860000* 28861000 *28865000**28866000* 28868300  28868400 *28868500* 28879000  28881000  28883000
        28889000
X  --  STREAM VARIABLE  --  DECLARED AT 30920000
        30925000
X  --  DEFINE  --  DECLARED AT 36004000
        36007000  36009000
X  --  LABEL  --  DECLARED AT 37004000  --  OCCURS AT 37172000
        37046810  37047700  37048400  37085000  37100010  37121000
X  --  LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37241810
        37240700  37241540  37255100
X  --  STREAM VARIABLE  --  DECLARED AT 37240700
        37240800 *37240910*
X  --  STREAM VARIABLE  --  DECLARED AT 37255100
        37255200
X  --  REAL  --  DECLARED AT 37323000
       *37327000* 37328000  37329000
X  --  STREAM VARIABLE  --  DECLARED AT 38131000
        38131500  38132000
X  --  STREAM VARIABLE  --  DECLARED AT 39905000
        39906000 *39909000* 39912000  39918000
X  --  STREAM VARIABLE  --  DECLARED AT 39950000
        39951000
X  --  REAL  --  DECLARED AT 40004500
        40016025  40016200  40016240  40016400  40016510  40016910  40016920  40017280 *40017290* 40027240  40027250
        40027270  40027290  40027295  40042100  40047100  40060305  40062000  40072000  40074000  40076000  40078033
        40078068 *40078070* 40078074  40078092 *40100700**40100900**40101250**40261046**40290300**40290400**40290600*
       *40320200* 40320600 *40321100**40321310* 40321400  40322100  40322220  40322410  40322425  40323600  40323700
        40324200  40327000
X  --  STREAM VARIABLE  --  DECLARED AT 40320200
       *40320300* 40320500
X  --  STREAM VARIABLE  --  DECLARED AT 41316525
        41316530  41316535
X  --  STREAM VARIABLE  --  DECLARED AT 41333005
X  --  REAL ARRAY  --  DECLARED AT 44018000
        44037000
X  --  REAL ARRAY  --  DECLARED AT 44207200
X  --  REAL ARRAY  --  DECLARED AT 45002800
       *45094600**45101000* 45111000 *45114000**45115000* 45116000 *45119000**45120000**45121000**45122000**45124000*
       *45125000**45126000* 45128000 *45129000* 45130000  45131100  45135010
X  --  STREAM VARIABLE  --  DECLARED AT 45131100
        45131200
XCLICK  --  INTEGER  --  DECLARED AT 44016000
XCLICK  --  INTEGER  --  DECLARED AT 44207100
       *44216900*
XCLOCK  --  REAL  --  DECLARED AT 00114000
```

```
        02173297  05953085  06188000 *06188100* 07550100  08307000  08383100  08394000  08410100  08572510  08713000
        12699000  12855000  14411860  14415000 *15622000* 18710800  20031500  20043800  20106000 *20157700* 20173200
        20289110  20289260 *22012000**22909000* 28299000  37441500  38217500  38220000  41310500  41316520  41319900
        41320430  41321900  41329700  41333900  41603800  44016000  44207100  45092180  45118000 *45135200* 45135230
       *48000000* 48002000
XCLOCK  --  STREAM VARIABLE  --  DECLARED AT 05953085
XCLOCKTIME  --  DEFINE  --  DECLARED AT 20019500
        20031500  20043800
XCLOCKTIME  --  DEFINE  --  DECLARED AT 20086000
        20106000
XCLOCKTIME  --  DEFINE  --  DECLARED AT 20146200
XD  --  LABEL  --  DECLARED AT 16700500  --  OCCURS AT 16804000
        16705000
XDFILE  --  LABEL  --  DECLARED AT 05952620  --  OCCURS AT 05975700
        05960680
XEXIT  --  LABEL  --  DECLARED AT 04555000  --  OCCURS AT 04648400
        04626000
XI  --  REAL  --  DECLARED AT 20566250
       *20567010* 20567050  20567057  20567065  20567085  20567090  20567097  20567105 *20570010* 20570020 *20573460*
        20573540
XIO  --  LABEL  --  DECLARED AT 04554200  --  OCCURS AT 04568200
        04567845  04567900
XIO  --  LABEL  --  DECLARED AT 04670650  --  OCCURS AT 04673550
        04673400
XLST  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 02052800
        02052700
XLST  --  REAL ARRAY  --  DECLARED AT 08100050
        08104900
XLST  --  REAL ARRAY  --  NAME PARAMETER  --  DECLARED AT 20382015
        20382010  20382220  20382280  20382300  20382340 *20382360**20382380**20382400*
XLST  --  REAL ARRAY  --  DECLARED AT 20566280
        20566290 *20567005* 20567025  20567030 *20567035**20567050**20567057**20567065* 20567085 *20567090**20567097*
       *20567105* 20570040  20570050 *20570070**20573350**20573540* 20574100  20580302
XLSTSZ  --  REAL  --  DECLARED AT 20566260
       *20567005* 20567010 *20567020* 20567025  20567035
XSFS  --  LABEL  --  DECLARED AT 08856000  --  OCCURS AT 08910000
        08883000  08912000
XT  --  STREAM LABEL  --  DECLARED AT 16042300  --  OCCURS AT 16043400
XT  --  STREAM LABEL  --  DECLARED AT 16092000  --  OCCURS AT 16098000
        16093000  16094000  16095000  16096000
XT  --  STREAM LABEL  --  DECLARED AT 16143000  --  OCCURS AT 16147000
        16145000
XT  --  STREAM LABEL  --  DECLARED AT 16191000  --  OCCURS AT 16196000
XTRA  --  INTEGER  --  VALUE PARAMETER  --  DECLARED AT 39000100
        39000000  39000100  39307100  39307300
XTRA  --  REAL  --  DECLARED AT 41003100
        41309000
XTRAC  --  REAL  --  DECLARED AT 39001200
       *39307200*
XTRAR  --  REAL  --  DECLARED AT 39001200
        39307400
XX  --  LABEL  --  DECLARED AT 24032800  --  OCCURS AT 24038500
        24037600
XXIT  --  LABEL  --  DECLARED AT 04555000  --  OCCURS AT 04567840
        04567700
XXIT  --  STREAM LABEL  --  DECLARED AT 12234000  --  OCCURS AT 12242000
        12236000  12238000
XXIT  --  STREAM LABEL  --  DECLARED AT 16038200  --  OCCURS AT 16040600
```

```
          16038400  16038700
XXIT  --  STREAM LABEL  --  DECLARED AT 16855300  --  OCCURS AT 16856000
          16855400
XXIT  --  STREAM LABEL  --  DECLARED AT 20054400  --  OCCURS AT 20055300
XXIT  --  STREAM LABEL  --  DECLARED AT 20061700  --  OCCURS AT 20063100
          20062200
XXXXXX  --  DEFINE  --  DECLARED AT 00417000
XXXXXX  --  SUBROUTINE  --  DECLARED AT 44037000
XX0  --  STREAM LABEL  --  DECLARED AT 12231500  --  OCCURS AT 12234000
XX1  --  REAL  --  DECLARED AT 28201200
          28205400
XX2  --  REAL  --  DECLARED AT 28201200
          28201400
XYT  --  LABEL  --  DECLARED AT 19695000  --  OCCURS AT 19799060
          19697400  19697700
XYT  --  LABEL  --  DECLARED AT 42511500  --  OCCURS AT 42553000
          42539060
X1  --  REAL  --  DECLARED AT 06068700
         *06073900* 06074100 *06077400* 06085100  06085600 *06091600* 06091800  06093900  06094100 *06097100**06097400*
          06098300 *06110800* 06111100  06111400  06111700
X1  --  STREAM VARIABLE  --  DECLARED AT 07463000
          07464000
X1  --  DEFINE  --  DECLARED AT 14546200
          14598300  14602500  14603000  14603200  14603300  14603310  14603600  14604000
X1  --  STREAM VARIABLE  --  DECLARED AT 14702025
X1  --  STREAM VARIABLE  --  DECLARED AT 38131000
X1  --  REAL  --  DECLARED AT 40005110
         *40100200* 40100300  40100600  40100700  40101100 *40249200* 40250000
X2  --  REAL  --  DECLARED AT 06068700
         *06074200* 06077000 *06077400* 06078100 *06085900* 06086300  06086400 *06090000* 06090600 *06092600* 06092700
          06093900 *06097000**06110800* 06111000  06111400
X2  --  STREAM VARIABLE  --  DECLARED AT 06074200
X2  --  STREAM VARIABLE  --  DECLARED AT 06090000
X2  --  STREAM VARIABLE  --  DECLARED AT 07463000
          07464100
X2  --  STREAM VARIABLE  --  DECLARED AT 14702025
X2  --  STREAM VARIABLE  --  DECLARED AT 38131000
X2  --  REAL  --  DECLARED AT 40005110
         *40100200* 40100800 *40101100* 40101250  40101300 *40252000* 40253000 *40257030* 40257060  40261040  40261043
          40261048  40261100
X3  --  REAL  --  DECLARED AT 06068700
         *06073900* 06074100 *06084900* 06085100  06085200 *06087000* 06087200 *06087300* 06087400 *06088200* 06088300
          06089000 *06092500* 06092700  06093100  06093200  06093300  06093400  06093700 *06110900* 06111300
X4  --  REAL  --  DECLARED AT 06068700
          06068800 *06085100* 06085200 *06085600* 06085700 *06095100* 06095200  06095400 *06110900* 06111500
X5  --  REAL  --  DECLARED AT 06068700
          06068800  06068900 *06077400* 06077500  06077600 *06077700* 06078000 *06085500* 06085700  06085800 *06111000*
          06111500  06111700
Y  --  REAL  --  DECLARED AT 01250300
          01251800 *01252350* 01255400  01256300  01259100
Y  --  STREAM VARIABLE  --  DECLARED AT 01251800
         *01252200*
Y  --  REAL  --  DECLARED AT 02133150
         *02173100* 02173300
Y  --  REAL  --  DECLARED AT 02382000
          02385000  02387000 *02389000**02390000* 02391000
Y  --  REAL  --  DECLARED AT 04554100
```

```
        *04556100**04567870* 04588270  04588400 *04648150* 04648200
Y  --   STREAM VARIABLE  --  DECLARED AT 04588270
         04588340
Y  --   STREAM VARIABLE  --  DECLARED AT 04588400
         04588480
Y  --   REAL  --  DECLARED AT 04668550
        *04671250**04673300*
Y  --   LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05851600
         05851220  05852200  05852350
Y  --   LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05963800
         05970600
Y  --   STREAM VARIABLE  --  DECLARED AT 06269000
Y  --   STREAM VARIABLE  --  DECLARED AT 07032000
         07036220
Y  --   REAL  --  DECLARED AT 08318000
         08318200  08320000  08324000  08332100
Y  --   STREAM VARIABLE  --  DECLARED AT 08318200
Y  --   STREAM VARIABLE  --  DECLARED AT 08365000
Y  --   STREAM VARIABLE  --  DECLARED AT 14702025
        *14702450*
Y  --   STREAM VARIABLE  --  DECLARED AT 15022000
Y  --   STREAM VARIABLE  --  DECLARED AT 16751500
         16752500
Y  --   STREAM VARIABLE  --  DECLARED AT 16756000
        *16767000*
Y  --   REAL  --  DECLARED AT 18004000
        *18012000* 18014100  18015000  18017000 *18059000**18062000* 18063000  18068000 *18069000* 18073000
Y  --   STREAM VARIABLE  --  DECLARED AT 20511665
         20511702
Y  --   STREAM VARIABLE  --  DECLARED AT 22136000
         22141000
Y  --   STREAM VARIABLE  --  DECLARED AT 22145050
         22145300
Y  --   REAL  --  DECLARED AT 24032200
        *24033700* 24033800 *24033900* 24034000  24034200 *24034400* 24034500 *24035300* 24035400 *24035600* 24035700
         24035800  24035900 *24037000* 24037100 *24037200* 24037300  24037500 *24039100* 24039200  24039300 *24039500*
         24039600
Y  --   REAL  --  DECLARED AT 28003000
         28075800  28076000  28078400  28080000  28085000  28085200
Y  --   REAL  --  DECLARED AT 28203400
         28203600 *28242400* 28243200 *28267000* 28267200
Y  --   LABEL  --  DECLARED AT 37180600  --  OCCURS AT 37241700
         37232750  37233250  37255100
Y  --   STREAM VARIABLE  --  DECLARED AT 37255100
        *37255700*
Y  --   STREAM VARIABLE  --  DECLARED AT 38131000
        *38135500*
Y  --   REAL  --  DECLARED AT 40004000
        *40016200* 40016400  40016410  40016420  40016500  40016600  40017200  40017250 *40074000* 40075000 *40322440*
         40322442
Y  --   REAL  --  DECLARED AT 42516000
         42517030  42517050 *42525120* 42525140
Y  --   STREAM VARIABLE  --  DECLARED AT 42517030
Y  --   REAL  --  DECLARED AT 44011000
Y  --   REAL  --  DECLARED AT 44206700
        *44240800* 44240880  44240900
Y  --   REAL  --  DECLARED AT 45002000
```

```
YECH  --  STREAM LABEL  --  DECLARED AT 16926090  --  OCCURS AT 16926180
          16926125  16926160
YR  --  REAL  --  DECLARED AT 08344000
        *08360000* 08364000  08367000  08368000  08370000
Y1  --  REAL  --  DECLARED AT 40005210
        *40100500* 40100700  40100800  40100900
Y2  --  REAL  --  DECLARED AT 40005210
        *40100500* 40100600  40100700
Z  --  REAL  --  DECLARED AT 02133150
        *02173095* 02173110  02173150  02173210  02173296  02173300  02173350
Z  --  STREAM VARIABLE  --  DECLARED AT 02221000
          02224000
Z  --  STREAM VARIABLE  --  DECLARED AT 02275850
Z  --  STREAM VARIABLE  --  DECLARED AT 04251300
          04251400
Z  --  REAL  --  DECLARED AT 04554100
        *04588020* 04588100 *04588210**04588230* 04588240  04588270  04588400
Z  --  STREAM VARIABLE  --  DECLARED AT 04588270
          04588350
Z  --  STREAM VARIABLE  --  DECLARED AT 04588400
          04588500
Z  --  DEFINE  --  DECLARED AT 05702000
          05703500  05704000  05722000  05724000  05728000  05728180  05729300
Z  --  INTEGER  --  DECLARED AT 05841350
          05842500  05843500  05843950 *05844920**05844930* 05846360
Z  --  LABEL  --  DECLARED AT 05847800  --  OCCURS AT 05851700
          05850600  05851700
Z  --  LABEL  --  DECLARED AT 05952600  --  OCCURS AT 05970300
          05967900  05969400
Z  --  REAL  --  DECLARED AT 06351000
        *06353500**06353530* 06353540 *06353545* 06353551 *06353600* 06353650 *06353680* 06353700
Z  --  STREAM VARIABLE  --  DECLARED AT 06353545
Z  --  STREAM VARIABLE  --  DECLARED AT 06353600
Z  --  STREAM VARIABLE  --  DECLARED AT 06353680
Z  --  STREAM VARIABLE  --  DECLARED AT 07032000
          07036240
Z  --  STREAM LABEL  --  DECLARED AT 07494000  --  OCCURS AT 07496000
Z  --  STREAM VARIABLE  --  DECLARED AT 08318200
Z  --  STREAM VARIABLE  --  DECLARED AT 08365000
Z  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 08546000
          08547000  08547200  08547600  08551200  08558000
Z  --  STREAM VARIABLE  --  DECLARED AT 08774000
          08776000  08778000  08781000
Z  --  STREAM LABEL  --  DECLARED AT 08922000  --  OCCURS AT 08924000
Z  --  REAL  --  DECLARED AT 09679300
        *09680200* 09680300  09680400  09682610  09682700
Z  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 12500500
          12500000  12500500  12621000
Z  --  REAL  --  VALUE PARAMETER  --  DECLARED AT 12800500
          12800000  12800500  12847000
Z  --  REAL  --  DECLARED AT 14545000
        *14555500* 14556000 *14569500* 14581000  14584000 *14592000* 14598100
Z  --  STREAM VARIABLE  --  DECLARED AT 14645400
          14650000
Z  --  STREAM VARIABLE  --  DECLARED AT 14702025
          14702200
Z  --  STREAM VARIABLE  --  DECLARED AT 20411000
```

```
        *16377000* 16522000  16689300
ZZSTA   --  INTEGER  --  DECLARED AT 166920
         16692500 *16712500* 16739500  16788          29600  16902800
ZZSTA   --  INTEGER  --  DECLARED AT 16907500
         16908000  16925500  16965000  16967500



CROSS REFERENCE STATISTICS
----- --------- ----------

PHASE ONE - SORT  7507 IDENTIFIERS
        3:57 ELAPSED TIME (MIN:SEC)
        2:20 PROCESSOR TIME
        3:46 I/O TIME

PHASE TWO - SORT  53608 REFERENCES
        9:00 ELAPSED TIME (MIN:SEC)
        8:24 PROCESSOR TIME
        1:19 I/O TIME

PHASE THREE - PRINT CROSS REFERENCE (  14650 LINES)
        4:59 ELAPSED TIME (MIN:SEC)
        4:25 PROCESSOR TIME
        2:00 I/O TIME


LABEL  000000000LINE  00177244017725400000000000000001070000150001500000000000 ESPOL  /DISK
```