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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
3          COPY LOG4820      ** MAP EC HISTORY **
4          *****
5          *
6          *          *** PREREQUISITES ***
7          *
8          *          NONE
9          *
10         *****
11         *
12         *          *** MODIFICATIONS ***
13         *
14         * MODIFICATION'S MADE TO CORRECT PROBLEMS ENCOUNTERED DURING TESTING *
15         *
16         *****
17         *
18         *          *** REA'S INCORPORATED ***
19         *
20         *          NONE
21         *
22         *****
23         *
24         *          *** SPECIAL INSTRUCTIONS ***
25         *
26         *          NONE
27         *
28         *****
29         *
30         *          *** E. C. HISTORY ***
31         *
32         *          DATE 01OCT76 DATE 15MAR77 DATE 10JUN77 DATE 22JUL77
33         *          E.C. 578468 E.C. 578714 E.C. 578625 E.C. 578757
34         *
35         *****
36         *
37         *          I4820 START X'2500'          START ADDRESS OF ALL 'I' TYPE PROG
38         *          @QUES EQU X'0100'          EQUATED VALUE FOR MDI STATEMENT
39         *          @FIXT EQU X'0101'          EQUATED VALUE FOR MDI STATEMENT
40         *          @STOP EQU X'0102'          EQUATED VALUE FOR MDI STATEMENT
41         *          @OTO EQU X'0200'          EQUATED VALUE FOR MDI STATEMENT
42         *          @CALL EQU X'0201'          EQUATED VALUE FOR MDI STATEMENT
43         *          @INPT EQU X'0300'          EQUATED VALUE FOR MDI STATEMENT
44         *          @QUXX EQU X'0400'          EQUATED VALUE FOR MDI STATEMENT
45         *          @TUXX EQU X'0500'          EQUATED VALUE FOR MDI STATEMENT
46         *          @NVLD EQU X'0600'          EQUATED VALUE FOR MDI STATEMENT
47         *          EQ EQU X'0000'          EQUATE FOR EQUAL
48         *          NE EQU X'0004'          EQUATE FOR NOT EQUAL
49         *          HI EQU X'0008'          EQUATE FOR HIGH
50         *          NH EQU X'000C'          EQUATE FOR NOT HIGH
51         *          LO EQU X'0010'          EQUATE FOR LOW
52         *          NL EQU X'0014'          EQUATE FOR NOT LOW
53         *          LT EQU X'0018'          EQUATE FOR LESS THAN
54         *          LE EQU X'000C'          EQUATE FOR LESS THAN OR EQUAL TO
55         *          GT EQU X'0008'          EQUATE FOR GREATER THAN
56         *          GE EQU X'0014'          EQUATE FOR GREATER THAN OR EQUAL TO
57         *          CN EQU X'0200'          EQUATE FOR ON
58         *          OF EQU X'0202'          EQUATE FOR OFF
59         *          MX EQU X'0204'          EQUATE FOR MIXED
60         *          EBC EQU X'0000'          EQUATE FOR EBCDIC DATA TRANSFER
61         *          HEX EQU X'0001'          EQUATE FOR HEX DATA TRANSFER
62         *          XTRNL EQU X'0001'          EQUATE FOR EXTERNAL REFERENCE
63         *          INTRNL EQU X'0000'          EQUATE FOR INTERNAL REFERENCE
64         *          PARM EQU X'0000'          EQUATE INDICATING PARAMETER
65         *          DA EQU X'0001'          EQUATE FOR DEVICE ADDRESS
66         *          UA EQU X'0002'          EQUATE FOR UNIT ADDRESS
67         *          DUMMY EQU X'0000'          DUMMY EQUATE
68         *          PID EQU *-X'0D00'          ADDRESS OF MDI HEADER
69         *          PTYPE EQU *-X'22CE'          ADDRESS OF PROCESSOR TYPE FIELD
70         *          STEPNUM EQU PID+X'000C'          ADDRESS OF DECIMAL STEP NUMBER
71         *          CPWD1 EQU PID+X'000E'          ADDRESS OF OPTION WORD ONE
72         *          CPWD2 EQU PID+X'0010'          ADDRESS OF OPTION WORD TWO
73         *          TUSTATUS EQU PID+X'0018'          ADDRESS OF TU STATUS WORD
74         *          TWORK EQU PID+X'001A'          ADDRESS OF TU WORK AREA
75         *          TUPARM1 EQU PID+X'009A'          ADDRESS OF PARM 1 POINTER
76         *          TUPARM2 EQU PID+X'009C'          ADDRESS OF PARM 2 POINTER
77         *          TUPARM3 EQU PID+X'009E'          ADDRESS OF PARM 3 POINTER
78         *          TUPARM4 EQU PID+X'00A0'          ADDRESS OF PARM 4 POINTER
79         *          TUPARM5 EQU PID+X'00A2'          ADDRESS OF PARM 5 POINTER
80         *          TUPARM6 EQU PID+X'00A4'          ADDRESS OF PARM 6 POINTER
81         *          TUPARM7 EQU PID+X'00A6'          ADDRESS OF PARM 7 POINTER
82         *          TUPARM8 EQU PID+X'00A8'          ADDRESS OF PARM 8 POINTER
83         *          TUPARM9 EQU PID+X'00AA'          ADDRESS OF PARM 9 POINTER
84         *          TUPARM10 EQU PID+X'00AC'          ADDRESS OF PARM 10 POINTER
85         *          TUPARM11 EQU PID+X'00AE'          ADDRESS OF PARM 11 POINTER
86         *          TUPARM12 EQU PID+X'00B0'          ADDRESS OF PARM 12 POINTER
87         *          TUPARM13 EQU PID+X'00B2'          ADDRESS OF PARM 13 POINTER
88         *          TUPARM14 EQU PID+X'00B4'          ADDRESS OF PARM 14 POINTER
89         *          TUPARM15 EQU PID+X'00B6'          ADDRESS OF PARM 15 POINTER
90         *          TUPARM16 EQU PID+X'00B8'          ADDRESS OF PARM 16 POINTER
91         *          TUMSGWTR EQU PID+X'00BA'          ADDRESS OF -> TO COMMON MSG WRITER
92         *          TUA EQU PID+X'00BE'          ADDRESS OF UNIT ADDRESS IN EBC
93         *          TUDA EQU PID+X'00C0'          ADDRESS OF DEVICE ADDRESS IN EBC
94         *          TUBUFF EQU PID+X'00C2'          ADDRESS OF LAST USED WORD IN MAP
95         *          TULAST EQU PID+X'00C4'          ADDRESS OF LAST ADDRESSABLE WORD
96         *          TURESULN EQU PID+X'00C6'          ADDRESS OF LENGTH OF TU RESULTS
97         *          TURESUL EQU PID+X'00C8'          ADDRESS OF TU RESULTS FIELD
98         *          TUNAME EQU PID+X'00CA'          ADDRESS OF MAP NAME FIELD IN HEX
99         *          TUNPT EQU PID+X'0146'          ADDRESS OF $INPT DATA
100        *          PARMARA EQU PID+X'016E'          ADDRESS OF $INPT INPUT AREA
101        *          @DCADD1 EQU PID+X'01B8'          MDI POINTER
102        *          @DCADD2 EQU PID+X'01BA'          MDI POINTER
103        *          SUPSTAT EQU PID+X'01C4'          ADDRESS OF MDI STATUS
104        *          DEVADD EQU PID+X'01D0'          ADDRESS OF DEVICE ADDRESS TABLE 0
105        *          DEVADD1 EQU PID+X'01DA'          ADDRESS OF DEVICE ADDRESS TABLE 1
106        *          DEVADD2 EQU PID+X'01E4'          ADDRESS OF DEVICE ADDRESS TABLE 2
107        *          DEVADD3 EQU PID+X'01E8'          ADDRESS OF DEVICE ADDRESS TABLE 3
108        *          DEVADD4 EQU PID+X'01F8'          ADDRESS OF DEVICE ADDRESS TABLE 4
109        *          DEVADD5 EQU PID+X'0202'          ADDRESS OF DEVICE ADDRESS TABLE 5
110        *          DEVADD6 EQU PID+X'020C'          ADDRESS OF DEVICE ADDRESS TABLE 6
111        *          DEVADD7 EQU PID+X'0216'          ADDRESS OF DEVICE ADDRESS TABLE 7
112        *          PRINT OFF
113

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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
002500 2794          198          DC A(ENTPT)          POINT TO MAP ENTRY POINT TABLE
199          *****          *****
200          *****          *****
201          *
202          *          THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D3C00)
203          *          TO LOCATE THE CORRECT RULE TO INVOKE, TO OBTAIN THE PROPER
204          *          PARAMETERS TO PASS TO THE TU'S AND TO PASS TO THE OPERATOR
205          *          THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS
206          *          PURPOSE THEY ARE:
207          *
208          *          STEP AND RULE ADDRESS TABLE
209          *          THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND
210          *          THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE.
211          *          ENTRIES ARE AS FOLLOWS:
212          *          A) AN ADDRESS OF THE RULE DC START AREA
213          *          B) THE STEP NUMBER IN DECIMAL
214          *          C) AN EQUATE FOR THE STEP NUMBER
215          *
216          *          RULE INFORMATION TABLE
217          *          THIS TABLE CONTAINS THE REQUIRED INFORMATION TO EXECUTE
218          *          THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN
219          *          UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS
220          *          INDICATED WITH A X'0000' FOR THE RULE EQUATE.
221          *
222          *          $QUES
223          *          A) RULE EQUATE X'0100'
224          *          B) ADDRESS OF THE YES LEG RULE
225          *
226          *          $FIXT
227          *          A) RULE EQUATE X'0101'
228          *          B) ADDRESS OF MESSAGE TO PRINT
229          *
230          *          $STCP
231          *          A) RULE EQUATE X'0102'
232          *          B) ADDRESS OF MESSAGE
233          *
234          *          $GOTO
235          *          A) RULE EQUATE X'0200'
236          *          B) ADDRESS OF MESSAGE
237          *          C) NAME OF MAP TO GO TO
238          *          D) ENTRY POINT WITHIN GO TO MAP TO USE
239          *          E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE
240          *
241          *          $CALL
242          *          A) RULE EQUATE X'0201'
243          *          B) ADDRESS OF MESSAGE
244          *          C) NAME OF MAP TO CALL
245          *          D) ENTRY POINT WITHIN CALLED MAP TO USE
246          *          E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE
247          *
248          *          $INFT
249          *          A) RULE EQUATE X'0300'
250          *          B) INPUT TYPE (EBCDIC OR HEX)
251          *          C) ADDRESS OF YES LEG RULE
252          *          D) DESTINATION LOCATION OF INPUT DATA
253          *          E) LENGTH OF INPUT DATA
254          *          F) LOWER LIMIT OF GOOD DATA
255          *          G) HIGHER LIMIT OF GOOD DATA
256          *
257          *          $QUXX
258          *          A) RULE EQUATE X'0400'
259          *          B) ADDRESS OF YES LEG RULE
260          *          C) TU BRANCH TO ADDRESS (INITIAL)
261          *          D) TU BRANCH TO ADDRESS (SECONDARY)
262          *          E) LENGTH OF PARAMETER IN BYTES
263          *          F) PARAMETER TO PASS TO TU
264          *          G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER
265          *
266          *          $TUXX
267          *          A) RULE EQUATE X'0500'
268          *          B) ADDRESS OF YES LEG RULE
269          *          C) TU BRANCH TO ADDRESS
270          *          D) TYPE OF COMPARE TO MAKE ON RESULTS
271          *          E) LENGTH OF COMPARED RESULTS
272          *          F) MASK FIELD FOR COMPARE
273          *          G) LENGTH OF PARAMETER IN BYTES
274          *          H) PARAMETER TO PASS TO THE TU
275          *          I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER
276          *
277          *          $NVLD
278          *          A) RULE EQUATE X'0600'
279          *
280          *          ENTRY POINT TABLE
281          *          THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT
282          *          THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE
283          *          REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWS:
284          *
285          *          A) NAME OF ENTRY PCINT
286          *          B) ADDRESS OF ENTRY POINT RULE TABLE
287          *
288          *          THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'
289          *
290          *          MESSAGE TABLE
291          *          THIS TABLE CONTAINS THE MESSAGE PASSED TO THE OPERATOR
292          *          VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWS:
293          *
294          *          A) EQUATE FOR START OF MESSAGE BLOCK
295          *          B) NUMBER OF LINES OF MESSAGE
296          *          C) LENGTH OF FOLLOWING LINE
297          *          D) FIRST LINE OF MESSAGE
298          *          E) LENGTH OF FOLLOWING LINE
299          *          F) SECOND LINE OF MESSAGE
300          *          G) ETC.
301          *
302          *          *****
303          *          *****
304          *          *****
305          *          *****

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Table with columns: LOCTR, OBJECT TEXT, STMT, SOURCE STATEMENT. Contains assembly code for steps 0001 through 0037, including instructions like DC, EQU, and AL2 with various addresses and labels.

Table with columns: LOCTR, OBJECT TEXT, STMT, SOURCE STATEMENT. Contains assembly code for steps 0038 through 0065, including instructions like DC, EQU, and AL2. Includes a 'RULE INFORMATION TABLE' section at the bottom.

Table with 4 columns: LOCTR, OBJECT TEXT, STMT SOURCE STATEMENT, and COPYRIGHT IBM CORP 1976. Contains assembly code for a diskette unit device.

Table with 4 columns: LOCTR, OBJECT TEXT, STMT SOURCE STATEMENT, and COPYRIGHT IBM CORP 1976. Contains assembly code for a diskette unit device, including a second page of the program.

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
002786 0100 772+N00063 DC A(@QUES)
002788 278E 773+ DC AL2(N00065)
00278A 0101 774+N00064 \$FIXT FT=(F00348)
00278C 2C94 775+N00064 DC A(@FIXT)
00278E 0101 776+ DC A(F00348)
002790 2CA2 777+N00065 \$FIXT FT=(F00350),GTC=((0070,A))
002792 0000 778+N00065 DC A(@FIXT)
002794 779+ DC A(F00350)
780 DC AL2(DUMMY)
781 ENTPT EQU *

LOCTR OBJECT TEXT STMT SOURCE STATEMENT
002A98 0014 888 DC A(0020)
002A9A E2C5C540D4C9D440D 889 DC CL0020 SEE MIM PARA A3.9.2
002AAE 890 F00225 EQU *

Table with columns: BIT, HEX, CS STATUS IN PROGRESS, CS AVAILABLE, CS STATUS INTERRUPT ERR, ISB BITS ON (1-7), TEST UNIT RESULTS VOID, OIO CC ERROR, NO INTERRUPT, INTERRUPT CC ERROR, TEST UNIT RESULTS NO GOOD.

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
00002D 1006+IOLC EQU 45 13 4 OIO CC ERROR
00002E 1007+NOIN EQU 46 14 2 NO INTERRUPT
00002F 1008+INCC EQU 47 15 1 INTERRUPT CC ERROR
1010** COMMQN BUFFER FOR PRINTING DATA
1011**
1013+\$TUID DC A(*-*) TEST UNIT IDENTIFICATION
1014+\$IOLC DC A(*-*) I/O AND INTR CONDITION CODES
1015+\$ISB DC A(*-*) R7, INTR STATUS BYTE & DEV ADRS
1016+\$ISTIC DC A(*-*) ADRS OF LAST I/O + 4 BYTES
1017+\$DEV1 DC A(*-*) DEVICE DEPENDENT DATA
1018+\$DEV2 DC A(*-*) *
1019+\$DEV3 DC A(*-*) *
1020+\$DEV4 DC A(*-*) *
1021+\$SCVID EQU DEV1
1022+\$DCBUF EQU *
1023+\$DCB1 DC A(*-*) READ ID BUFFER FOR IBIS & TERN
1024+\$DCB2 DC A(*-*) DCB BUFFER FOR LAST DCB USED
1025+\$DCB3 DC A(*-*) LAST DCB TABLE, CONTROL WORD
1026+\$DCB4 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
1027+\$DCB5 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
1028+\$DCB6 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
1029+\$DCB7 DC A(*-*) LAST DCB TABLE, CHAIN ADRS
1030+\$DCB8 DC A(*-*) LAST DCB TABLE, BYTE COUNT
1031+\$*
1032+\$CSBUF EQU *
1033+\$CYTL1 DC A(*-*) CYCLE STEAL DATA BUFFER
1034+\$CYTL2 DC A(*-*) CYCLE STEAL BUFFER, RESIDUAL ADRS
1035+\$CYTL3 DC A(*-*) CYCLE STEAL WD 2, DEVICE DEPEND
1036+\$CYTL4 DC A(*-*) CYCLE STEAL WD 3, DEVICE DEPEND
1037+\$CYTL5 DC A(*-*) CYCLE STEAL WD 4, DEVICE DEPEND
1038+\$CYTL6 DC A(*-*) CYCLE STEAL WD 5, DEVICE DEPEND
1039+\$CYTL7 DC A(*-*) CYCLE STEAL WD 6, DEVICE DEPEND
1040+\$CYTL8 DC A(*-*) CYCLE STEAL WD 7, DEVICE DEPEND
1041+\$*
1042+\$SUBN DC A(*-*) LAST SUBROUTINE ADDRESS USED
1043+\$DATA DC 2A(*-*) OPTIONAL DATA
1044+\$INTL DC X'0021' INTERRUPT LEVEL REQUESTED
1045+\$TURT DC A(*-*) TEST UNIT RETURN ADRS TO MDI
1046+\$DVID DC X'0106' DEVICE ID
1047+\$SVCAL DC A(DEVADD) ADRS OF DEVICE ADDRESS
1048+\$* DC A(*-*) IBIS CYLINDER ADDRESS
1049**
1050** THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
1051** FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
1052** STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
1053**
1054+T3C02 MVMW X'3C02', \$TUID SET UP TEST UNIT ID
1055+ BXS (R7) RETURN TO MDI SUPVR
1056+ COPY CCMEQU *****
1059 *
1060 * EQUATED NAMES FOR SUPPORTED SVC'S
1061 *
1062 *****
1063 OUT EQU 0 OUT SVC
1064 OUTIN EQU 1 OUTIN SVC
1065 IDLE EQU 2 IDLE SVC
1066 ASCII EQU 3 HEX TO ASCII SVC
1067 CHNGE EQU 4 CHANGE LEVEL SVC
1068 PGMCK EQU 5 ALLOW RETURN ON PROGRAM CHECK SVC
1069 EXIT EQU 6 EXIT SVC
1070 TERM EQU 7 TERMINATE SVC
1071 RESET EQU 8 RESET DEVICE SVC
1072 RID EQU 9 READ ID SVC
1073 START EQU 10 START CYCLE STEAL SVC
1074 SICSS EQU 11 START CYCLE STEAL STATUS SVC
1075 PREP EQU 12 PREPARE DEVICE SVC
1076 READ0 EQU 13 READ WITH FUNCTION BIT 3 OFF SVC
1077 READ1 EQU 14 READ WITH FUNCTION BIT 3 ON SVC
1078 RSTAT EQU 15 READ STATUS SVC
1079 WRIT0 EQU 16 WRITE WITH FUNCTION BIT 3 OFF SVC
1080 WRIT1 EQU 17 WRITE WITH FUNCTION BIT 3 ON SVC
1081 CTRL EQU 18 CONTROL SVC
1082 RICEB EQU 19 RELEASE INTERRUPT CONTROL BLOCK SVC
1083 CICEB EQU 20 CONNECT INTERRUPT CONTROL BLOCK SVC
1084 HIO EQU 21 HALT ALL I/O
1085 REOSD EQU 22 REQUEST USE OF DCP DISK SVC
1086 RELSD EQU 23 RELEASE USE OF DCP DISK SVC
1087 HALT EQU 24 HALT SVC
1088 ETOH EQU 25 EBCDIC TO HEX SVC (STRING)
1089 HTOE EQU 26 HEX TO EBCDIC SVC (STRING)
1090 ATOH EQU 27 ASCII TO HEX SVC (STRING)
1091 HTOA EQU 28 HEX TO ASCII SVC (STRING)
1092 ETOA EQU 29 EBCDIC TO ASCII SVC (STRING)
1093 ATOA EQU 30 ASCII TO EBCDIC SVC (STRING)
1094 READI EQU 31 READ DATA SETS FOR MDL/UTIL
1095 WHITI EQU 32 WRITE DATA SETS FOR UTIL
1097 *****
1098 *
1099 * EQUATES USED BY TU'S AS CONSTANTS
1100 *
1101 *****
1102 PLUS EQU C'+* PLUS CHAR
1103 MINUS EQU C'-* MINUS CHAR
1105 ZERO EQU 0
1106 ONE EQU 1
1107 TWO EQU 2
1108 THREE EQU 3
1109 FOUR EQU 4
1110 FIVE EQU 5
1111 SIX EQU 6
1112 SEVEN EQU 7
1113 EIGHT EQU 8
1114 NINE EQU 9
1115 TEN EQU 10
1116 ELEVN EQU 11
1117 TWELV EQU 12
1118 THRTN EQU 13
1119 FVVTN EQU 15
1120 SIXTN EQU 16
1121 THRY2 EQU 32
1122 SIXT4 EQU 64
1123 CNE28 EQU 128
1124 TWO56 EQU 256
1125 ONEK EQU 1024

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
000800 1126 TWOK EQU 2048
000C00 1127 THREEK EQU 3072
001000 1128 FOURK EQU 4096
FFFFF0 1130 M1 EQU -1
FFFFFE 1131 M2 EQU -2
FFFFFD 1132 M3 EQU -3
FFFFFC 1133 M4 EQU -4
1135 *****
1136 *
1137 * THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE
1138 * BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.
1139 *
1140 *****
1141 BS0 EQU 0
1142 BS1 EQU 1
1143 BS2 EQU 2
1144 BS3 EQU 3
1145 BS4 EQU 4
1146 BS5 EQU 5
1147 BS6 EQU 6
1148 BS7 EQU 7
1149 BS8 EQU 8
1150 BS9 EQU 9
1151 BS10 EQU 10
1152 BS11 EQU 11
1153 BS12 EQU 12
1154 BS13 EQU 13
1155 BS14 EQU 14
1156 BS15 EQU 15
1158 COPY T4851
1159 T4851 TUIT \$ERR\$
1160 *****06FEB76**
1161** TEST UNIT
1162**
1163** FILE READ TEST #1 3/11/76
1164**
1165** PURPSE
1166**
1167** DETERMINE THE FOLLOWING:
1168** 1. TEST WHETHER READ ERRORS OCCUR ON KNOWN GOOD DATA
1169** ON ONLY ONE HEAD.
1170**
1171** CALLING SEQUENCE
1172**
1173** PERFORM THE FOLLOWING:
1174** 1. SELECT HEAD ZERO.
1175** 2. ISSUE A READ VERIFY COMMAND.
1176** 3. VERIFY AND SAVE WHETHER THERE WERE READ ERRORS.
1177** 4. SELECT HEAD ONE.
1178** 5. ISSUE A READ VERIFY COMMAND.
1179** 6. VERIFY AND SAVE WHETHER THERE WERE READ ERRORS.
1180**
1181** PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
1182**
1183** -- TURESUL BIT 0---READ ERRORS ON HEAD0
1184** -- TURESUL BIT 1---READ ERRORS ON HEAD1
1185** -- TURESUL BIT 2---NOT USED
1186** -- TURESUL BIT 3---NOT USED
1187** -- TURESUL BIT 4---NOT USED
1188** -- TURESUL BIT 5---NOT USED
1189** -- TURESUL BIT 6---NOT USED
1190** -- TURESUL BIT 7---NOT USED
1191** -- TURESUL BIT 8---NOT USED
1192** -- TURESUL BIT 9---NOT USED
1193** -- TURESUL BIT 10---NOT USED
1194** -- TURESUL BIT 11---NOT USED
1195** -- TURESUL BIT 12---NOT USED
1196** -- TURESUL BIT 13---NOT USED
1197** -- TURESUL BIT 14---NOT USED
1198** -- TURESUL BIT 15---NOT USED
1199** -- TURESUL BIT 16-31 CYCLE STEAL STATUS FOR HEAD ZERO
1200** -- TURESUL BIT 32-47 CYCLE STEAL STATUS FOR HEAD ONE
1201**
1202** RETURN CONTROL
1203**
1204** B TURT* RETURN TO MDI SUPERVISOR
1205**
1206**
1207*****
1208+T4851 MVM R7, TURT
1209+ MVMW X'4851', \$TUID SAVE RETURN ADDRESS
1210+ MVA OPTN1, R4 SAVE TU ID FOR DISPLAY
1211+ BAL \$CCNC, R6 SET UP POINTER ADRS IN R4
1212+ DC A(\$ERR\$) CLEAR DEV DEP STG AND CONNECT I/O BL
1213** ERROR ADRS FOR INVALID PREP
1214 MVMZ TURESUL, R2 CLEAR RESULTS WORD
1215 MVMZ TURESUL+2, R2 CLEAR RESULTS WORD 2
1216 MVMZ TURESUL+4, R2 CLEAR RESULTS WORD 3
1217 MVA TURESUL, R0
1218 MVM TUBUFF, R0 GET ADDRESS OF FIRST UNUSED STOR POS
1219 MVM R0, VRDCB+14 LOAD BUFFER ADDRESS IN VERIFY DCB
1220 MVMW X'5000', R0 DELAY TO GET BY BUSY AFTER RESET
1221 JCT * R0
1222 MVMW X'0005', SKDCB SEEK CONTROL WORD - NO CHAINING
1223 MVMW 0, SKLCB+2 SELECT HEAD ZERO, NO DIFF
1224 MVMW 2, SKDCB+8 HEAD SELECT (NEW ARCH)
1225 BAL \$SEK, R6 SEEK
1226 DC A(\$ERR\$) ERROR
1227 TBTR (R4, ER) CHECK FOR CC ERROR
1228 BON \$ERR\$ ERROR
1229 MVMW X'000C', VRDCB RD VERIFY CONTROL WORD
1230 MVMW X'0000', VRDCB+6 N-C
1231 MVMW X'0001', VRDCB+8 H-R
1232 MVMW X'0D00', VRDCB+12 SETUP BYTE COUNT
1233 DC \$RDVY, R6 VERIFY
1234 DC A(\$ERR\$) ERROR
1235 TBTR (R4, CSA) ERROR
1236 JON CYCLE STEAL STATS AVAILABLE?
1237 J T51R VERIFY ERROR
1238 MVM CSTL2, TURESUL+2 CYCLE STEAL STATUS FOR HEAD ZERO
1239 T51R TWI X'4780', TURESUL+2 ANY ERRORS?
1240 JOFF T511 NO
1241 TBTS (R2, 0) SET HEAD ZERO ERROR BIT
1242 T511 MVMW X'1000', SKDCB+2 SELECT HEAD ONE, NO DIFF
1243 MVMW X'0100', SKDCB+8 HEAD SELECT (NEW ARCH)
1244 BAL \$SEK, R6 SEEK

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002DCC 32B8 1245 DC A(\$ERR\$) ERROR
002DCE 4CA1 1246 TBTR (R4,ER) CHECK FOR CC ERROR
002DD0 6A00 32B8 1247 BDN \$ERR\$ ERROR
002DD4 4020 308C 000C 1248 MVWI X'000C',VRDCB ED VERIFY CONTROL WORD
002DDA 4020 3092 1000 1249 MVWI X'1000',VRDCB+6 N-C
002DE0 4020 3094 0101 1250 MVWI X'0101',VRDCB+8 H-R
002DE6 4020 3098 0D00 1251 MVWI X'0D00',VRDCB+12 SETUP BYTE COUNT
002DEC 6E03 3140 1252 BAL \$RDVY,R6 VERIFY
002DF0 32B8 1253 DC A(\$ERR\$) ERROR
002DF2 4CA9 1254 TBTR (R4,CSA) CYCLE STEAL STATS AVAILABLE?
002DF4 1201 1255 JON \$ERR\$ VERIFY ERROR
002DF6 5008 1256 J T512 EXIT
002DF8 8828 2D12 18CC 1257 MVW CSTL2,TURESUL+4 CYCLE STEAL STATUS FOR HEAD ONE
002DFE 402B 18CC 4780 1258 TWI X'4780',TURESUL+4 ANY ERRORS?
002E04 1001 1259 JOFF T512 NO
002E06 4A41 1260 TBTS (R2,1) SET HEAD ONE ERROR BIT
002E08 6E03 3118 1261 T512 BAL \$RDID,R6 READ ID TO ESTABLISH HEAD POSITION
002E0C 2E0E 1262 DC A(T51F) TO BE PASSED BACK TO SUPERVISOR
002E0E 6802 3308 1263 T51F TXIT EXIT
1264+T51F B \$CONX RETURN TO MDI CONTROLLER
1265+*****
1267 COPY T4852
1268 T4852 TUIT \$ERR\$
1269+*****06FEB76**
1270**
1271** TEST UNIT
1272**
1273** FILE SEEK SETUP TEST #1. 3/11/76
1274**
1275** PURPOSE
1276**
1277** DETERMINE THE FOLLOWING:
1278** 1. MOVE HEADS TO CORRECT CYLINDER PRIOR TO DATA ACCESS
1279** COMMAND.
1280**
1281** CALLING SEQUENCE
1282**
1283** PERFORM THE FOLLOWING:
1284** 1. RECALIBRATE.
1285** 2. ISSUE SEEK FORWARD.
1286** 3. SELECT HEAD ZERO.
1287**
1288**
1289** PARAMETER IS PASSED TO PROGRAM IN THE FOLLOWING FORMAT.
1290** PARM1=SEEK DIFFERENCE FOR SEEK FORWARD CMMAND.
1291**
1292**
1293** RETURN CONTROL
1294**
1295** B TURTN* RETURN TO MDI SUPERVISOR
1296**
1297+*****
1298+T4852 MVW R7,TURTN SAVE RETURN ADDRESS
1299+ MVWI X'4852', \$TUID SAVE TU ID FOR DISPLAY
1300+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
1301+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1302+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
1303**
1304 MVWI X'5000',R0 DELAY TO GET BY BUSY AFTER RESET
1305 JCT *R0 *
1306 BAL \$RECL,R6 RECALIBRATE
1307 DC A(\$ERR\$) ERROR
1308 TBTR (R4,ER) CHECK FOR CC ERROR
1309 BDN \$ERR\$ ERROR
1310 MVWI X'0005',SKDCB SEEK CONTROL WORD
1311 MVWI X'0000',SKDCB+2 SELECT HEAD ZERO, FORWARD
1312 MVWI X'0000',SKDCB+8 SELECT HEAD ZERO (NEW ARCH)
1313 MVB TUPARM1*,SKDCB+3 DIFFERENCE FROM MDI
1314 BAL \$SEEK,R6 SEEK SELECT HEAD ZERO
1315 DC A(\$ERR\$) ERROR
1316 TBTR (R4,ER) INTERRUPT ERROR?
1317 BDN \$ERR\$ YES-ERROR
1318 BAL \$RDID,R6 READ ID TO ESTABLISH HEAD POSITION
1319 DC A(\$ERR\$) TO BE PASSED BACK TO SUPERVISOR
1320 TXIT EXIT
1321+ B \$CONX RETURN TO MDI CONTROLLER
1322+*****
1323 *
1324 COPY T4853
1325 T4853 TUIT \$ERR\$
1326+*****06FEB76**
1327**
1328** TEST UNIT
1329**
1330** ATTACHMENT CARD/VFO CHECK OUT TEST #10. 3/11/76
1331**
1332** PURPOSE
1333**
1334** DETERMINE THE FOLLOWING:
1335** 1. ATTACHMENT CARD RQS IS FUNCTIONING CORRECTLY.
1336** 2. ECHO CHECKS SHOW ATTACHMENT CARD FAILURE.
1337** 3. VFO DATA WRAP WORKS.
1338** 4. DISKETTE SPEED IS CORRECT.
1339**
1340** CALLING SEQUENCE
1341**
1342** PERFORM THE FOLLOWING:
1343** 1. ISSUE START DIAGNOSTIC COMMAND.
1344** 2. CHECK ROS HASH TOTALS.
1345** 3. CHECK DISKETTE SPEED WITH HEADS LOADED.
1346** 4. VERIFY ECHO CHECKS.
1347** 5. VERIFY DATA WRAP THROUGH VFO CARD IN FILE.
1348**
1349**
1350** PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
1351** . TURESUL BIT 00----NOT USED
1352** . TURESUL BIT 01----NOT USED
1353** . TURESUL BIT 02----NOT USED
1354** . TURESUL BIT 03----NOT USED
1355** . TURESUL BIT 04----NOT USED
1356** . TURESUL BIT 05----NOT USED
1357** . TURESUL BIT 06----NOT USED
1358** . TURESUL BIT 07----NOT USED
1359** . TURESUL BIT 08----NOT USED
1360** . TURESUL BIT 09----NOT USED
1361** . TURESUL BIT 10----NOT USED

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1362** . TURESUL BIT 11----NOT USED
1363** . TURESUL BIT 12----NO INTERRUPT RECEIVED.
1364** . TURESUL BIT 13----ROS CHECK MISCOMPARE.
1365** . TURESUL BIT 14----ECHO CHECK ERROR.
1366** . TURESUL BIT 15----DISK SPEED INCORRECT.
1367** . TURESUL BIT 16-31--FIRST ROS CHECK SUM.
1368** . TURESUL BIT 32-47--SECOND ROS CHECK SUM.
1369** . TURESUL BIT 48-63--INDEX PERIOD (5P7C=162.5MS/6934=170.9MS)
1370** . TURESUL BIT 64-79--DIAGNOSTIC DATA RESULTS FROM WRAP TEST.
1371**
1372** RETURN CONTROL
1373**
1374** B TURTN* RETURN TO MDI SUPERVISOR
1375**
1376+*****
1377+T4853 MVW R7,TURTN SAVE RETURN ADDRESS
1378+ MVWI X'4853', \$TUID SAVE TU ID FOR DISPLAY
1379+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
1380+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1381+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
1382**
1383 MVWZ TURESUL,R2 CLEAR RESULTS WORD
1384 MVWZ TURESUL+2,R2 CLEAR RESULTS WORD 2
1385 MVWZ TURESUL+4,R2 CLEAR RESULTS WORD 3
1386 MVWZ TURESUL+6,R2 CLEAR RESULTS WORD 4
1387 MVWZ TURESUL+8,R2 CLEAR RESULTS WORD 5
1388 MVA TURESUL,R2
1389 MVWI X'5000',R0
1390 JCT *R0
1391 BAL \$DIAG,R6
1392 DC A(T53Z)
1393 TBTR (R4,ER)
1394 BDN \$ERR\$
1395 MVW DIAGW,TURESUL+2 STORE DIAG RESULTS (1ST WD)
1396 MVW DIAGW+4,TURESUL+4 * (3RD WD)
1397 MVW DIAGW+8,TURESUL+6 * (5TH WD)
1398 MVW DIAGW+12,TURESUL+8 * (7TH WD)
1399 AW DIAGW,DIAGW+2 CHECK ROS HASH TOTALS
1400 CWI X'FFFF',DIAGW+2 *
1401 JCT *R0
1402 TBTS (R2,13)
1403 T53A AW DIAGW+4,DIAGW+6 CHECK ROS HASH TOTALS
1404 CWI X'FFFF',DIAGW+6 *
1405 JE T53B
1406 TBTS (R2,13)
1407 T53B CWI X'5F7C',DIAGW+8 IS 5TH WD BETWEEN X'5F7C' & '6934'
1408 JLT T53C
1409 CWI X'6934',DIAGW+8 ERROR
1410 JGT T53C
1411 J T53D
1412 T53C TBTS (R2,15) DISK SPEED INCORRECT
1413 T53D CWI X'00FF',DIAGW+10 ANY BITS ON IN 8-15 OF 6TH WD
1414 JOFF T53X
1415 TBTS (R2,14)
1416 J T53Y
1417 T53Z TBTS (R2,12)
1418 T53X TXIT NO INTERRUPT RECEIVED
1419+T53X B \$CONX RETURN TO MDI CONTROLLER
1420+*****
1421 COPY T4854
1422 T4854 TUIT T54E
1423+*****06FEB76**
1424**
1425** TEST UNIT
1426**
1427** FILE SCOPE SEEK TEST #1. 3/11/76
1428**
1429** PURPOSE
1430**
1431** DETERMINE THE FOLLOWING:
1432** 1. PROVIDE SEEK COMMANDS TO FILE TO INSURE, VISUALLY,
1433** THAT THE SEEK MECHANISM IS OPERATING PROPERLY.
1434**
1435**
1436** CALLING SEQUENCE
1437**
1438** PERFORM-THE FOLLOWING:
1439** 1. RECALIBRATE.
1440** 2. SEEK FORWARD.
1441** 3. SELECT HEAD ONE.
1442** 4. SEEK REVERSE.
1443** 5. SELECT HEAD ZERO.
1444** 6. SEEK FORWARD.
1445** 7. SELECT HEAD ONE.
1446**
1447**
1448** PARAMETERS PASSED TO PROGRAM IN FOLLOWING FORMAT:
1449** . PARM1---SEEK DIFFERENCE FOR FIRST SEEK FORWARD COMMAND.
1450** . PARM2---SEEK DIFFERENCE FOR SEEK REVERSE COMMAND.
1451** . PARM3---SEEK DIFFERENCE FOR SECOND SEEK FORWARD COMMAND.
1452**
1453** RETURN CONTROL
1454**
1455** B TURTN* RETURN TO MDI SUPERVISOR
1456+*****
1457+T4854 MVW R7,TURTN SAVE RETURN ADDRESS
1458+ MVWI X'4854', \$TUID SAVE TU ID FOR DISPLAY
1459+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
1460+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1461+ DC A(T54E) ERROR ADRS FOR INVALID PREP
1462**
1463 MVWI X'5000',R0 DELAY TO GET BY BUSY AFTER RESET
1464 JCT *R0 *
1465 BAL \$RECL,R6 RECALIBRATE
1466 DC A(T54E)
1467 TBTR (R4,ER)
1468 JON T54E
1469 MVWI X'0005',SKDCB SEEK CONTROL WORD - NO CHAINING
1470 MVWI X'1000',SKDCB+2 SELECT HEAD ONE, FORWARD
1471 MVWI X'0100',SKDCB+8 HEAD SELECT (NEW ARCH)
1472 MVB TUPARM1*,SKDCB+3 DIFFERENCE FROM MDI
1473 BAL \$SEEK,R6 SEEK
1474 DC A(T54E)
1475 TBTR (R4,ER)
1476 JON T54E
1477 MVWI X'0800',SKDCB+2 SELECT HEAD ZERO, REVERSE

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002F4E 4020 3064 0000 1478 MVWI X'0000',SKDCB+8 HEAD SELECT (NEW ARCH)
002F54 4020 305E 1000 1479 MVB TUPARM2*,SKDCB+3 DIFFERENCE FROM MDI
002F5A 6E03 3108 1480 BAL \$SEEK,R6 SEEK
002F5E 2F7C 1481 DC A(T54E) ERROR
002F60 4CA1 1482 TBTR (R4,ER) CHECK FOR CC ERROR
002F62 120C 1483 JON T54E ERROR
002F64 4020 305E 1000 1484 MVWI X'1000',SKDCB+2 SELECT HEAD ONE
002F6A 4020 3064 0100 1485 MVWI X'0100',SKDCB+8 HEAD SELECT (NEW ARCH)
002F70 8038 189E 305F 1486 MVB TUPARM3*,SKDCB+3 DIFFERENCE FROM MDI
002F76 6E03 3108 1487 BAL \$SEEK,R6 SEEK
002F7A 2F7C 1488 DC A(T54E) ERROR
002F7C 6E03 3118 1489 T54E BAL \$RDID,R6 READ ID TO ESTABLISH HEAD POSITION
002F80 2F82 1490 DC A(T54F) TO BE PASSED BACK TO SUPERVISOR
1491 T54F TXII EXIT
1492+T54F B \$CCNX RETURN TO MDI CONTROLLER
1493+*****
1494 *
1496 *
1497 COPY T4856
1498 T4856 TUIT T56E
1499+*****06FEB76**
1500**
1501** TEST UNIT
1502**
1503** FILE SCOPE READ TEST #2. 3/11/76
1504**
1505** PURPOSE
1506**
1507** DETERMINE THE FOLLOWING:
1508** 1. PROVIDE SCOPE TEST TC PROBE READ SIGNALS DURING READ
1509** COMMANDS TO HEAD 0 OR HEAD 1 OR BOTH HEADS 0 & 1.
1510**
1511** CALLING SEQUENCE
1512**
1513** PERFORM THE FOLLOWING:
1514** 1. ASSUME RECALIBRATE ALREADY PERFORMED.
1515** 2. NO TRACK CROSSING SEEKS.(SEEK DIFFERENCE =0)
1516** 3. SELECT HEAD FROM PARM.
1517** 4. ISSUE READ VERIFY COMMAND.
1518** 5. SELECT HEAD ONE.
1519** 6. ISSUE READ VERIFY COMMAND.
1520**
1521** PARAMETERS PASSED TO PROGRAM IN FOLLCWING FORMAT:
1522**
1523** PARM1---BIT0---NOT USED
1524** " BIT1---NOT USED
1525** " BIT2---NOT USED
1526** " BIT3---HEAD SELECTION.(0=HEAD 0/1=HEAD 1)
1527** " BIT4---NOT USED
1528** " BIT5---NOT USED
1529** " BIT6---NOT USED
1530** " BIT7---HEAD SELECTION.(0=HEAD 0/1=HEAD 1)
1531** PARM2---BIT8---NOT USED
1532** " BIT9---NOT USED
1533** " BIT10---NOT USED
1534** " BIT11---NOT USED
1535** " BIT12---NOT USED
1536** " BIT13---NOT USED
1537** " BIT14---NOT USED
1538** " BIT15---ONLY READ ONE HEAD.
1539**
1540** RETURN CCNTROL
1541**
1542** B TURTN* RETURN TO MDI SUPERVISOR
1543**
1544+*****
1545+T4856 MVW R7,TURTN SAVE RETURN ADDRESS
1546+ MVWI X'4856',STUID SAVE TU ID FOR DISPLAY
1547+ MVA CPTN1,R4 SET UP POINTER ADRS IN R4
1548+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1549+ DC A(T56E) ERROE ADRS FOR INVALID PREP
1550**
1551** MVWI X'5000',R0 DELAY TO GET BY BUSY AFTER RESET
1552** JCT *R0 *
1553** MVWI X'0005',SKDCB SEEK CONTROL WORD - NO CHAINING
1554** MVB TUPARM2*,SKDCB+2 SELECT HEAD NOOP
1555** MVB TUPARM1*,SKDCB+8 HEAD SELECT FROM MDI
1556** BAL \$SEEK,R6 HEAD SELECT (NEW ARCH)
1557** DC A(T56E) SEEK
1558** TBTR (R4,ER) ERROR
1559** JON T56E CHECK FOR CC ERROR
1560** MVWI X'000C',VRDCB VERIFY CONTROL WORD
1561** MVB TUPARM1*,VRDCB+6 N-C
1562** MVWI X'0001',VRDCB+8 H-R
1563** MVB TUPARM1*,VRDCB+8 HEAD FROM MDI
1564** MVWI X'0000',VRDCB+12 BYTE COUNT
1565** BAL \$RDVY,R6 READ VERIFY
1566** DC A(T56E) ERROR
1567** TBTR (R4,ER) CHECK FOR CC ERROR
1568** JON T56E ERROR
1569** MVB TUPARM2*,R0 GET PARM2
1570** JNZ T56E BYPASS BIT ON
1571** MVWI X'1000',SKDCB+2 SELECT HEAD CNE-NOOP
1572** MVWI X'0100',SKDCB+8 HEAD SELECT (NEW ARCH)
1573** BAL \$SEEK,R6 SEEK
1574** DC A(T56E) ERROR
1575** TBTR (R4,ER) CHECK FOR CC ERROR
1576** JON T56E ERROR
1577** MVWI X'0101',VRDCB+8 H-R
1578** BAL \$RDVY,R6 READ VERIFY
1579** DC A(T56E) ERROE
1580** T56E BAL \$RDID,R6 READ ID TO ESTABLISH HEAD POSITION
1581** DC A(T56F) TO PASS EACK TO SUPERVISOR
1582** T56F TXII EXIT
1583+T56F B \$CCNX RETURN TO MDI CONTROLLER
1584+*****
1585+*****2/17/76*****
1586 *
1588 *
1590 * COPY T48DCB
1591 *
1592 *****
1593 *
1594 * DCB TABLES
1595 *

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1596 *****
1597 *
1598 ***** DIAGNOSTIC DCB *****
1599 *
1600 DGDCB DC X'2000' DIAGNOSTIC DCB
1601 DC X'0000' NOT USED
1602 DC X'0000' NOT USED
1603 DC X'0000' NOT USED
1604 DC X'0000' NOT USED
1605 DC X'0000' CHAIN ADDRESS
1606 DC X'000E' BYTE COUNT FOR READ DIAG
1607 DC A(DIAGW) DATA ADDRESS
1608 *
1609 *
1610 ***** RECALIBRATE DCB *****
1611 *
1612 CLDCB DC X'0007' RECALIBRATE DCB
1613 DC 7A(*-*)
1614 *
1615 ***** FORMAT DCB *****
1616 *
1617 FRDCB DC X'0002' FORMAT CCNTROL WORD
1618 DC X'0000' NOT USED
1619 DC A(*-*) FORMAT DATA WORD
1620 DC A(*-*) N - C BYTES
1621 DC X'0001' H - R BYTES
1622 DC A(*-*) CHAIN ADDRESS
1623 DC F'0' NOT USED
1624 DC F'0' NOT USED
1625 *
1626 ***** READ SECTOR ID DCB *****
1627 *
1628 RSLCB DC X'200A' READ SECTOR ID
1629 DC X'0000' NOT USED
1630 DC X'0000' NOT USED
1631 DC X'0000' NOT USED
1632 DC X'0000' NOT USED
1633 DC X'0000' CHAIN ADDRESS
1634 DC X'0004' BYTE COUNT FOR READ SECTOR ID
1635 DC A(SCTID) SECTOR ID DATA ADDRESS
1636 *
1637 ***** SEEK DCB *****
1638 *
1639 SKLCB DC X'0005' SEEK DCB
1640 DC X'0000' BIT 3=HEAD;BIT 4=DIRECTION;8-15=DIFF
1641 DC F'0'
1642 DC F'0'
1643 DC F'0' 0-7 HEAD SELECT (NEW ARCH)
1644 DC F'0'
1645 DC F'0'
1646 DC F'0'
1647 *
1648 *
1649 ***** CYCLE STEAL STATUS DCB *****
1650 *
1651 CSDCB DC X'2000' CONTROL WORD
1652 DC F'0' NOT USED
1653 DC F'0' NOT USED
1654 DC F'0' NOT USED
1655 DC F'0' NOT USED
1656 DC F'0' NOT USED
1657 DC X'0004' 2 WORDS OF STATS
1658 DC A(CSBUF) ADDRESS OF CYCLE STEAL STATUS DATA
1659 *
1660 ***** WRITE DCB *****
1661 *
1662 WRDCB DC X'0001' 8-15=1- ATA AM;8-15=2-CONTROL AM
1663 DC F'0' NOT USED
1664 DC F'0'
1665 DC X'0000' SERCH ARGUMENT N-C
1666 DC X'0000' SEARCH ARGUMENT H-R
1667 DC A(*-*) CHAIN ADDRESS
1668 DC F'0' BYTE COU T
1669 DC A(*-*) WRITE DATA ADDRESS
1670 *
1671 ***** VERIFY DCB *****
1672 *
1673 VRDCB DC X'000C' CONTROL WORD
1674 DC F'0' NOT USED
1675 DC F'0' NOT USED
1676 DC A(*-*) N-C
1677 DC A(*-*) H-R
1678 DC A(*-*) CHAIN ADDRESS
1679 DC F'0' BYTE COUNT
1680 DC A(*-*) VERIFY DATA ADDRESS
1681 *
1682 ***** READ DCB *****
1683 *
1684 RDLDCB DC X'2009' READ DCB CONTROL WOFD
1685 DC F'0' NOT USED
1686 DC F'0' NOT USED
1687 DC X'0000' SEARCH ARGUMENT N-C
1688 DC X'0101' SEARCH ARGUMENT H-R
1689 DC A(*-*) CHAIN ADDRESS
1690 DC F'3228' BYTE COUNT
1691 DC A(*-*) READ DATA ADDRESS
1692 *
1693 *
1694 *
1695 *
1696 CCUNT DC F'4096' BYTE COUNT (4096)
1697 CTN32 DC F'3200' BYTE COUNT (3200)
1698 SAVE DC X'0000' SCTID INFO
1699 DC X'0000' *
1700 DIFF DC X'0000' SEEK DIFFERENCE
1701 FDATA DC X'00C8' FORMAT DATA BYTE FOR COMPARE
1702 XXX DC X'0000' WORK WORD INT TO ZERO
1703 ENDEX DC X'0040' TERMINATING SEEK DIFFERENCE
1704 ZERO0 DC X'0000' CONSTANT ZERO
1705 ONE1 DC X'0001' CONSTANT ONE
1706 REVR DC X'0800' SEEK REVERSE
1707 HHRH DC X'0000' H-R
1708 BCNT DC X'0000' BYTE COUNT
1709 JOE DC X'0000' WRITE PARAMETER POINTER
1710 JCE1 DC X'0000' SAVE LOC FOR PARM LIST ADDRESS
1711 WDATA DC X'7AE5' WRITE DATA

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0030CC 69BD 1712 DC X'69BD' *
0030CE 0000 1713 CYLND DC X'0000' * TEMP SAVE AREA FOR CYLINDER #
0030D0 0000 1714 DC X'0000' *
0030D2 0000 1715 FORMT DC X'0000' * FROMAT BIT FROM OPERATOR
0030D4 004C 1716 CYLIN DC X'0004' * CYLINDER NUM SELECTED FROM OPERATOR
0030D6 0000 1717 HFAID DC F'0000' * HEAD NUM SELECTED FROM OPERATOR
0030D8 0001 1718 SECT DC F'0001' * SECTOR # SELECT BY OPERATOR
0030DA 0000 1719 BYCN0 DC F'3328' * BYTE COUNT SELECTED BY OPER
0030DC 0000 1720 TABLE DC A(*-*) * ADDR OF WRT PAR LIST FOR FORMAT RTNS
0030DE 0000000000000000 1721 DIAGW DC 7A(*-*) * DIAGNOSTIC BUFFER
0030EE 0000 1722 CONST DC X'0000' * SECTOR # PLUS ONE FOR N='X'
0030F0 00FF 1723 SBYT DC X'0000' * FULL BYTE COUNT FOR N='X'
0030F2 0000 1724 CDAT DC X'00FF' * CONSTANT '00' & 'FF'
0030F4 0000 1725 CTR01 DC X'0000' * COUNTER 1
0030F6 0000 1726 CTR02 DC X'0000' * COUNTER 2
0030F8 0000 1727 CTR03 DC X'0000' * COUNTER 3
0030FA 0000 1728 CTR04 DC X'0000' * COUNTER 4
0030FC 0000 1729 CTR05 DC X'0000' * COUNTER 5
0030FE 0000 1730 SAVR3 DC X'0000' * SAVE AREA
003100 0000 1731 SAVR5 DC X'0000' * SAVE AREA
003102 0000 1732 SIDE DC X'0000' * SIDE BEING TESTED
003104 0000 1733 TRK DC X'0000' * CURRENT CYLINDER NUMBER
003106 4C00 1734 WIDAT DC X'0000' * WORK AREA
1735 SVSIX DC X'4C00' * CYLINDER NUMBER 76
1737 * T48IO COPY
1738 * EXECUTE INPUT & OUTPUT COMMANDS
1739 * TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
1740 * EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
1741 * LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
1742 * SUPVR CALL.
1743 *
1744 * THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
1745 *
1746 * 1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
1747 * 2. ERROR INTERRUPTS RECEIVED FROM SUPVR
1748 * 3. LOOP ON ERROR, THE CALL MUST HAVE A 'DC' STATEMENT AFTER
1749 * THE CALL WITH THE ADDRESS OF THE RETRY STATEMENT
1750 * 4. CYCLE STEAL IN PROGRESS WITH AN ERROR
1751 * 5. SOMETHING ELSE
1752 *
1753 * THIS ROUTINE HAS THE FOLLOWING ENTRIES:
1754 *
1755 * 1 BAL \$SEK,R6 SEEK
1756 * 2 BAL \$RECL,R6 RECALIBRATE
1757 * 3 BAL \$RDID,R6 READ SECTOR ID
1758 * 4 BAL \$RD,R6 READ
1759 * 5 BAL \$RDVY,R6 READ VERIFY
1760 * 6 BAL \$WRT,R6 WRITE
1761 * 7 BAL \$FMT,R6 FORMAT
1762 * 8 BAL XIOCS,R6 CYCLE STEAL STATUSB
1763 * 9 BAL \$DIAG,R6 READ DIAGNOSTICS
1764 *
1765 * 003108 4020 326A 305C 1775 \$SEK MVA SKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1766 * 00310E 502C 1776 J XIO
1767 * 003110 4020 326A 302C 1777 \$RECL MVA CLDCB,IODCB SET UP BLOCK FOR SVC CALL
1768 * 003116 5028 1778 J XIO
1769 * 003118 4020 326A 304C 1781 \$RDID MVA RSDCB,IODCB SET UP BLOCK FOR SVC CALL
1770 * 00311E 4020 2CF8 9999 1782 MVWI X'9999',SCTID INVALIDATE SECTOR ID BUFFER AREA
1771 * 003124 4020 2CFA 9999 1783 MVWI X'9999',SCTID+2 *
1772 * 00312A 501E 1784 J XIO
1775 * 00312C 0BFF 1786 \$RD MVEI 255,R3 INIT READ BUFFER TO FF'S
1776 * 00312E 6D08 30AA 1787 MVW RDDCB+14,R5 *
1777 * 003132 4724 0400 1788 MVWI X'0400',R7 *
1778 * 003136 2BAC 1789 FFN R3,(R5) *
1779 * 003138 4020 326A 309C 1790 \$RD\$ MVA RDDCB,IODCB SET UP BLOCK FOR SVC CALL
1780 * 00313E 5014 1791 J XIO
1781 * 003140 4020 326A 308C 1792 \$RDVY MVA VRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1782 * 003146 5010 1793 J XIO
1783 * 003148 4020 326A 307C 1794 \$WRT MVA WRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1784 * 00314E 500C 1795 J XIO
1785 * 003150 4020 326A 303C 1796 \$FMT MVA FRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1786 * 003156 5008 1800 J XIO
1787 * 003158 4020 326A 301C 1801 \$DIAG MVA DGDCE,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1788 * 00315E 4020 326C 000D 1802 MVWI X'000D',ICMOD MODIFIER FOR DIAG OP
1789 * 003164 500E 1803 J XIO1
1790 * 003166 5601 1804 CEOP2 BXS (R6,2) DUMMY RETURN TO USER
1805 *
1806 * XEOP1
1807 * *****29JUL76**
1808 * SUB-ROUTINE
1809 *
1810 * EXECUTE INPUT AND OUTPUT COMMANDS
1811 *
1812 * PURPOSE
1813 *
1814 * TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
1815 * THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
1816 *
1817 * 1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
1818 * THE I/O COMMAND.
1819 * 2. SAVED THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
1820 * ISSUED BY THIS SUBROUTINE.
1821 * 3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
1822 * START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
1823 * 4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
1824 * SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
1825 * MYSTERY INTERRUPT (MI), CONTROL BIT IS SET.
1826 * 5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7. SET THE
1827 * EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC START'.

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1829** 6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
1830** STARTS TO DETERMINE A LOST INTERRUPT.
1831** 7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
1832** WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
1833** 8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
1834** 9. CHECK IF AN ERRCR WAS EXPECTED AND IF THERE WAS RETURN.
1835** 10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
1836** 11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
1837** 12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
1838** ISSUED BY THIS SUBROUTINE.
1839** 13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
1840** CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
1841** COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
1842**
1843** CALLING SEQUENCE
1844**
1845** THIS ROUTINE HAS THE FOLLOWING ENTRIES:
1846**
1847** --> BAL XIO OR XEQ ANY CYCLE STEAL COMMAND, MOD=0
1848** --> BAL XIO1 MOD PARM PRELOADED IN 'IOMOD'
1849** --> BAL XIOCS,R6 OR XEQ START CYCLE STEAL STATUS, MOD=F
1850** --> BAL XIOCS-4,R6 AUTO CS STATUS (FOLLOWING OTHER XIO
1851** AND DOES NOT POST INTERRUPT STATUS)
1852**
1853** RETURN CONTROL
1854**
1855** BXS (R6,2) RETURN TO USER NO ERROR
1856** OR B (R6) * RETURN AND RETRY ON ERROR
1857** *****
1858** MVWZ IOMOD,R3 SET MOF OF 0 FOR CYCLE STEAL OP
1859** J XIO1 CS I/O'S ARE NOT RETRIED
1860**
1861**
1862** TBTR (R4,CE) RESET CS STATUS INTER ERROR INDICAT.
1863** TBTS (R4,CS) SET 'CYCLE STEAL STATUS' IN PROGRESS
1864** XIOCS MVA CSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
1865** MVWI X'000F',IOMOD SET CYCLE STEAL MODIFIER
1866** TBTR (R4,CS) IS CS IN PROGRESS, ERROR CONDITION
1867** JON XIO2 * YES, BYPASS SAVING I/O ADRS
1868** MVW R6,ISTIO SAVE PAR FOR RETRY IF REQUESTED
1869** MVA DCB,R3 SET UP TO ADRS TO MOVE DCB TABLE
1870** MVW IODCB,R5 * AND THE FROM ADRS, ALONG WITH
1871** MVEI 16,R7 * THE NUMBER OF MOVES
1872** MVFN (R5),(R3) MOVE 1 STATUS WORD AND ADJUST
1873** MVEI 255,R3 CLEAR CYCLE STATUS BUFFER
1874** MVA CSBUE,R5 * TO ALL ONES *
1875** MVEI 16,R7 *
1876** FFN R3,(R5) *
1877** MVWI X'0708',SIOIN OVERLAY OLD CONDITION CODES
1878** MVWZ \$ISB,R3 ZERO OUT OLD ISB VALUE
1879**
1880**
1881** TBTR (R4,ER) RESET AN ERROR BEFORE I/O COMMAND
1882** TBTR (R4,EN) CLEAR INTERRUPT RECEIVED CNTL BIT
1883** MVA IOBLK,R7 SET UP CONTROL BLOCK FOR SUPVR
1884** TBTR (R4,SLE) RESET LEVEL ERROR INDICATOR
1885** TBTS (R4,XI) SET EXPECTED INTR CONTROL BIT
1886** SVC START CALL SUPVR FOR I/O COMMAND
1887**
1888** TBTR (R4,NI) IS AN INTR EXPECTED
1889** BN (R6,2) * NO, RETURN TO USER
1890**
1891** THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
1892**
1893** MVBI X'00',R5 SET UP WRK REG FOR 'LOST INTR'
1894** XIO8 TBTR (R4,IN) HAS INTERRUPT BEEN RECEIVED
1895** JON XIOCK * YES, CHECK IF ALL WAS SATISFACTORY
1896** SVC IDLE ALLOW ANOTHER PROGRAM A CHANCE TO RUN
1897** ADVANCE TIME OUT COUNT
1898** JNZ XIO8 BCH IF TIME OUT NOT REACHED
1899** TBTS (R4,ER) SET ON ERROR CONTROL BIT
1900** B (R6) * ERR 'NO INTERRUPT'
1901** *****03FEB76**
1902**
1903** SUBROUTINE
1904**
1905** I/O EXECUTE ERROR HANDLING ROUTINE
1906**
1907** EUPRCE
1908**
1909** THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
1910** PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
1911** SUPERVISOR AND IT WAS NOT ACCEPTED.
1912**
1913** CALLING SEQUENCE
1914**
1915** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
1916**
1917** RETURN CONTROL
1918**
1919** B (R6) * RETURN TO USERS ERROR HANDLER
1920**
1921** *****
1922** CC 0= DEVICE NOT ATTACHED
1923** FOR 1= DEVICE BUSY
1924** I/O 2= DEVICE BUSY AFTER RESET
1925** 3= COMMAND REJECT
1926** 4= INTERVENTION REQUIRED
1927** 5= INTERFACE DATA CHECK
1928** 6= CONTROLLER BUSY
1929** 7= I/O COMMAND EXCEPTED
1930**
1931**
1932** XIOER DC X'706E' COPY STATUS ANY LEVEL INTO R3
1933** SRL 13,R3 POSITION CC CODE TO BITS 13-15
1934** MVB R3,SIOIN * PUT IN LOG OUT AREA
1935** B (R6) * RETURN TO USER ERROR HANDLER
1936** *****14APR76**
1937**
1938** SUB-ROUTINE
1939**
1940** ERROR INTERRUPT RUNS ON INTERRUPT LEVEL 'SINTL'
1941**
1942** PURPOSE
1943**
1944** THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR
1945** OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE

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1948** EXPECTED CODE.
1949**
1950** CALLING SEQUENCE
1951**
1952** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT
1953**
1954** RETURN CONTROL
1955**
1956** SVC EXIT RETURN TO USER VIA SUPVR
1957**
1958**
1959**
1960** CC 0= CONTROLLER END ISB 0= ADD STATUS
1961** FOR 1= PROGRAM CONTROL INTERRUPT BITS 1= COMD REJECT
1962** INTR 2= EXCEPTION INTERRUPT FOR 2= INCOR LENGTH
1963** 3= DEVICE END INTERRUPT INTR 3= DCE SPEC CK
1964** 4= ATTENTION INTERRUPT 4= STG DATA CK
1965** 5= ATTENTION / PROGRAM CNTL INTR 5= INV STG ADRS
1966** 6= ATTENTION / EXCEPTION INTR 6= PROTRCT CK
1967** 7= ATTENTION / DEVICE END INTR 7= I-FACE DATA
1968**
1969** INTER DC X'706E' COPY STATUS ANY LEVEL INTO R3
1970** SRL 13,R3 POSITION INDICATORS IN R3
1971** MVA OPTN1,R4 SET UP BASE ADRS
1972** TBT (R4,CS) IS CS IN PROGRESS
1973** JOFF INTES * NO
1974** TBT (R4,CE) TURN ON CYCLE STEAL INTER ERROR
1975** MVW R7,CSTL8 SAVE CS ERR ISB VALUE, BITS 0-7
1976** MVB R3,CSTL8+1 * AND THE COND CODE
1977** J INTR1
1978** INTES TBT (R4,XE) TEST EXPECTED ATTN / ERROR IND
1979** JOFF INTES BCH IF NOT EXPECTED
1980** CBI 4,R3 IS THIS AN 'ATTENTION' INTR
1981** JBT INTR1 * YES, BCH TO END INTR SEQUENCE
1982** INTR TBT (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
1983** J INTR1
1984** THE ERROR INTERRUPT USES THE SAME
1985** ENDING SEQUENCE AS THE NORMAL INTR
1987**
1988**
1989** SOUBROUTINE
1990**
1991** OKAY INTERRUPT RUNS ON INTERRUPT LEVEL '\$INTL'
1992**
1993** PURPOSE
1994**
1995** TO CHECK THE INTERRUPT AND CONTINUE THE TEST
1996**
1997** CALLING SEQUENCE
1998**
1999** SUPERVISOR WILL ENTER HERE IF INTR CC IS AS REQUESTED
2000** THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE
2001** AFTER THE SPECIAL PART HAS BEEN COMPLETED AND THE
2002** COMMON SECTION IS HANDLED HERE.
2003**
2004** RETURN CONTROL
2005**
2006** SVC EXIT RETURN TO USER VIA SUPVR
2007**
2008**
2009** INTOK DC X'706E' COPY STATUS ANY LEVEL INTO R3
2010** SRL 13,R3 POSITION INDICATORS IN R3
2011** MVA OPTN1,R4 SET UP BASE ADRS
2012** INTR1 TBT (R4,IN) SET INTERRUPT RECEIVED
2013** TBT (R4,CS) IS 'CS IN PROGRESS' ON
2014** JON INTA2 * YES, BCH AROUND UPDATE
2015** MVB R3,\$IOIN+1 SAVE INTERRUPTING CC CODE
2016** MVW R7,\$ISB SAVE INTR STATUS AND DEV ADRS
2017** INTR2 EQU *
2018** CPCL R5 CURRENT LEVEL COPIED BY DCP
2019** SLL 4,R5 POSITION INTR LEVEL AND PUT
2020** ABI 1,R5 * IN 'I' BIT
2021** CW \$INTL,R5 IS THIS THE CORRECT INTR LEVEL
2022** JE INTR3 * YES, GO EXIT THIS LEVEL
2023** TBT (R4,\$LE) SET INTR LEVEL ERROR CONTROL BIT
2024** TBT (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
2025** INTR3 TBT (R4,XI) WAS INTERRUPT EXPECTED
2026** JON INTRX * YES, EXIT OFF THIS INTR LEVEL
2027** TBT (R4,MI) * NO, SET MYSTERY INTR CONTROL BIT
2028** CBI 4,R3 ATTENTION INTERRUPT?
2029** JBT INTRX YES
2030** TBT (R4,NG) ERROR, UNEXPECTED INTERRUPT
2031** INTRX SVC EXIT EXIT THIS LEVEL VIA SUPVR TO PGM
2033**
2034**
2035** THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT
2036** HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
2037** RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
2038**
2039**
2040** XIOCK TBT (R4,XE) WAS AN ERROR EXPECTED
2041** B (R6,2) * YES, EXIT THIS ROUTINE
2042** TBT (R6,CS) WAS AUTO CS IN PROGRESS
2043** JOFF XIOCV * NO, CONTINUE CHECKING
2044** TBT (R4,CE) IS CS IN AN ERR CONDITION
2045** JOFF XIOCO * NO, BCH
2046** B (R6)* CS ERROR
2047** XIOCO TBT (R4,CSA) TURN ON CS STATS AVAIL FLAG
2048** BXS (R6,2) GO TO USER
2049** XIOCV TBT (R4,ER) WAS ERROR INTR CONTROL BIT ON
2050** JOFF XIOCX * NO, EXIT THIS ROUTINE
2051**
2052** MVB \$IOIN+1,R5 GET LAST INTR CC CODE
2053** CBI 2,R5 IS THIS CC-2
2054** BNE (R6)* * NO, BCH TO ERROR HANDLER
2055** XIOCV MVB \$ISB,R5 GET LAST ISB DATA BYTE AND IF CS
2056** BN XIOCS-4 * AVAILABLE, GO AND GET IT
2057** B (R6)* ERROR
2058** XIOCV MVWZ OPTN3,R3 CLEAR OUT OPTION 3 CNTL BITS
2059** BXS (R6,2) RETURN TO USER VIA REG 6
2060**
2061** I/O PARAMETER LIST
2062**
2063** IOBLK DC A(DEVADD) ADRS OF DEVICE ADRS
2064** DC A(FLGER) ERROR ROUTINE ADRS
2065** IODCB DC A(*-*) DCB ADRS OF LEVEL & INTR

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2066** IOMOD DC A(*-*) MODIFIER
2067** DC A(*-*) ADRS OF LAST SVC CALL
2068** IORSP DC A(*-*) SECOND WORD OF LAST IDCB
2069**
2070** INTERRUPT CONTROL BLOCK FOR I/O COMMANDS
2071**
2072** INTBL DC A(DEVADD) ADRS OF DEVICE ADRS
2073** DC A(INTR) INTERRUPT OK RETURN ADRS
2074** DC A(INTR) INTERRUPT ERROR ADRS
2075** INTCC DC X'0003' INTERRUPT CODE EXPECTED
2077**
2078**
2079** SUBROUTINE
2080**
2081** CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE
2082**
2083** PURPOSE
2084**
2085** TO CONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
2086** PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICE
2087** TO INTERRUPT.
2088**
2089** CALLING SEQUENCE
2090**
2091** THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
2092**
2093** --> BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BLK
2094** --> BAL \$CONP,R6 PREPARE DEVICE ONLY, ALREADY CONNECT
2095**
2096** RETURN CONTROL
2097**
2098** OR BXS (R6,2) RETURN TO USER VIA REG 6 IF OKAY
2099** B (R6)* IF THE DEVICE COULD NOT BE CONNECTED
2100**
2101**
2102** \$CONC MVB 6,R7 NUMBER OF BYTE TO CLEAR
2103** MVB 0,R3 * AND THE DATA TO USE
2104** MVA DEV1,R5 * ALONG WITH THE ADRS TO USE
2105** R3,(R5) *
2106** MVWZ OPTN3,R3 CLEAR OLD CONTROLS FOR NEW ROUTINE
2107** MVA SVCAL,R7 SET UP TO REQUEST DCP SUPR DISK
2108** SVC REQSE *
2109** MVI 1,R7 SET UP DELAY FOR IBIS
2110** JCT * AND DECREMENT IT DOWN
2111** MVA INTR,R7 SET R7 TO CONTROL BLOCK AND
2112** SVC CICB * CONNECT IT TO THIS DEVICE
2113** BN (R6)* ERROR RETURN TO USER
2114**
2115** \$CONP MVW \$INTL,IODCB PUT IN LEVEL & INTR PARAMETER
2116** MVA IOBLK,R7 SET R7 TO CONTROL BLOCK TO PREPARE
2117** MVWZ X'070B', \$IOIN INITIALIZE CONDITION CODE STORAGE
2118** MVWZ \$ISB,R3 * AND CLEAR OLD ISB VALUE
2119** MVW R6,LSTIO SET UP ADDRESS THAT STARTED LAST I/O
2120** SVC PREP * AND CALL ON SUPVR
2121** BXS (R6,2) RETURN TO USER
2123**
2124**
2125** SUBROUTINE
2126**
2127** DISCONNECT THE INTERRUPT CONTROL BLCK AND LOG ERRORS
2128**
2129** PURPOSE
2130**
2131** DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
2132** SET THE 'NO GOOD' CONTROL BIT, THEN LOG THE DATA THAT HAS
2133** BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.
2134**
2135** CALLING SEQUENCE
2136**
2137** THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
2138**
2139** --> B \$ERR\$ SET 'NG' BIT AND CONVERT DATA TO LOG
2140** --> B \$CONX RETURN TO MDI SUPERVISOR TO TEST STS
2141**
2142** RETURN CONTROL
2143**
2144** OR B TURTN* RETURN TO MDI
2145** B (R6)* IF THE DEVICE COULD NOT BE CONNECTED
2146**
2147**
2148** \$ERR\$ MVI X'8000',TUSTATUS SET ON 'NO GOOD' STATUS BIT
2149** MVA HEBLK,R7 GET ADRS OF CONTROL BLOCK
2150** SVC HTOE CONVERT HEX TO EBC VIS DCP
2151** \$PRNT MVB 3,R5
2152** MVA TUWCRK,R3 SET UP BUFFER STORAGE
2153** MVW R3,BUFFT
2154** MVA LINE1,R1
2155** MVB 4,R7
2156** MVB 8,R6
2157** MVBUF (R3),(R1)
2158** MVB 4,R7
2159** MVB X'40',R2
2160** MVB R2,(R1)+
2161** JCT MVBUF,R6
2162** MVB 8,R6
2163** AWI 44,R1
2164** JCT MVBUF,R5
2165** MVWZ PIDMSG10,PID+2
2166** MVA FAKETU,@DCADD1
2167** DC2PT,@DCADD2
2168** OWI BITQ080,SUPSTAT
2169** MVA STUIR,R3
2170** BAL TUMSGTR*,R7 SET UP BUFFER STORAGE
2171** GC TO MESSAGE WRITER
2172** \$CONX EQU *
2173** MVE SCTID+1,SVCAL+3 SETUP CURRENT CYLINDER NUM
2174** MVA SVCAL,R7 ADDR OF RELEASE PARM LIST
2175** SVC RELSD RELEASE CONTROL
2176** MVB DEVADD,R7 GET DEVICE ADDRESS FROM MDI
2177** SVC RICB RELEASE INTERRUPT CONTROL BLOCK
2178** B TURTN* RETURN TO MDI SUPERVISOR
2179**
2180** \$BEGIN DC A(0007) NUMBER OF LINES TO PRINT
2181** DC A(0008) LINE LENGTH = 8 CHAR
2182** DC C** \$ECFT*
2183** DC A(0040) LINE LENGTH = 40 CHAR

LOCTR	OBJECT TEXT	STMT SOURCE	STATEMENT	COPYRIGHT IBM CORP 1976
00332C	E3E4C9C440C9D6C9D	2184+	DC C*TUID IOIN ISB INST	DEV1 DEV2 DEV3 DEV4
003354	0028	2185+	DC A(0040)	LINE LENGTH = 40 CHAR
003356	40404040404040404	2186+LINE1	DC C*	
00337E	0028	2187+	DC A(0040)	LINE LENGTH = 40 CHAR
003380	C3D5E3D340C4C3C2F	2188+	DC C*CNTRL DCB2 DCB3 DCB4	DCB5 CHAD BYCT ADRS
0033A8	0028	2189+	DC A(0040)	LINE LENGTH = 40 CHAR
0033AA	40404040404040404	2190+LINE2	DC C*	
0033D2	0028	2191+	DC A(0040)	LINE LENGTH = 40 CHAR
0033D4	D9E2C9C440C3E260F	2192+	DC C*RSID CS-2 CS-3 CS-4	CS-5 CS-6 CS-7 CS-8
0033FC	0028	2193+	DC A(0040)	LINE LENGTH = 40 CHAR
0033FE	40404040404040404	2194+LINE3	DC C*	
003426	0000	2195+*	DC A(*--*)	
003428	331E	2197+DC2PT	DC A(BEGIN)	
00342A	0101	2198+FIXTU	DC X*0101*	
00342C	0101	2199+FAKETU	DC X*0101*	
00F1F0		2200+PIDMSG10	EQU X*F1F0*	
000080		2201+BIT0080	EQU X*0080*	
		2202+*		
		2203+*		
		2204+*		
		2205+HEBLK	DC A(48)	NUMBER OF BYTES TO CONVERT
00342E	0030	2206+	DC A(\$TUID)	FROM ADRS
003430	2CF0	2207+	DC A(TUWCRK)	AND THE TO ADRS
003432	181A	2208 *		
000000		2210	END	

DECLARED	NAME	ATTRIBUTES AND REFERENCES	CROSS-REFERENCE LISTING	COPYRIGHT IBM CORP 1976
0	.R0.	ABSOLUTE. HEX VALUE(00000000)	1218 1219 1220 1221 1304 1305 1389 1390 1463	
0	.R1.	ABSOLUTE. HEX VALUE(00000001)	1464 1551 1552 1570	
0	.R2.	ABSOLUTE. HEX VALUE(00000002)	2154 2157 2160 2163	
0	.R3.	ABSOLUTE. HEX VALUE(00000003)	1214 1215 1216 1217 1241 1260 1383 1384 1385	
0	.R4.	ABSOLUTE. HEX VALUE(00000004)	1386 1387 1388 1402 1406 1412 1415 1417 2159	
0	.R5.	ABSOLUTE. HEX VALUE(00000005)	1786 1789 1859 1869 1872 1873 1876 1878 1934	
0	.R6.	ABSOLUTE. HEX VALUE(00000006)	1935 1970 1976 1980 2010 2015 2028 2058 2103	
0	.R7.	ABSOLUTE. HEX VALUE(00000007)	2105 2106 2118 2152 2153 2157 2169	
2102	\$CONC	ADDRESS. HEX LOCATION(0000327A) IN CSECT(I4820)	1210 1227 1235 1246 1254 1300 1308 1316 1379	LENGTH(2)
2172	\$CONX	ADDRESS. HEX LOCATION(00003308) IN CSECT(I4820)	1393 1459 1467 1475 1482 1547 1559 1568 1576	LENGTH(1)
1801	\$DIAG	ADDRESS. HEX LOCATION(00003158) IN CSECT(I4820)	1862 1863 1866 1880 1881 1883 1884 1887 1893	LENGTH(6)
2148	\$ERR\$	ADDRESS. HEX LOCATION(000032B8) IN CSECT(I4820)	1899 1971 1972 1974 1978 1982 2011 2012 2013	LENGTH(6)
1044	\$INTL	ADDRESS. HEX LOCATION(00002D26) IN CSECT(I4820)	2023 2024 2025 2027 2030 2040 2042 2044 2047	LENGTH(2)
1014	\$IOIN	ADDRESS. HEX LOCATION(00002CF2) IN CSECT(I4820)	2048 2049 2052 2053 2055 2104 2105 2151 2164	LENGTH(2)
1015	\$ISB	ADDRESS. HEX LOCATION(00002CF4) IN CSECT(I4820)	1211 1225 1233 1244 1252 1261 1301 1306 1314	LENGTH(2)
999	\$LE	ABSOLUTE. HEX VALUE(00000026)	1318 1380 1391 1460 1465 1473 1480 1487 1489	
1781	\$RDID	ADDRESS. HEX LOCATION(00003118) IN CSECT(I4820)	1548 1557 1566 1574 1579 1581 1804 1868 1888	LENGTH(6)
1793	\$RDVY	ADDRESS. HEX LOCATION(00003140) IN CSECT(I4820)	1900 1936 2041 2046 2048 2054 2057 2059 2113	LENGTH(6)
1778	\$RECL	ADDRESS. HEX LOCATION(00003110) IN CSECT(I4820)	2119 2121 2156 2161 2162	LENGTH(6)
1775	\$SEEK	ADDRESS. HEX LOCATION(00003108) IN CSECT(I4820)	1055 1208 1298 1377 1457 1545 1788 1871 1875	LENGTH(6)
1013	\$TUID	ADDRESS. HEX LOCATION(00002CF0) IN CSECT(I4820)	1882 1975 2016 2102 2107 2109 2110 2111 2116	LENGTH(2)
102	@DCADD1	ADDRESS. HEX LOCATION(000019E8) IN CSECT(I4820)	2149 2155 2158 2170 2174 2176	LENGTH(1)
103	@DCADD2	ADDRESS. HEX LOCATION(000019EA) IN CSECT(I4820)	1211 1301 1380 1460 1548	LENGTH(1)
39	@FIXT	ABSOLUTE. HEX VALUE(00000101)	1264 1321 1419 1492 1584	
41	@GOTO	ABSOLUTE. HEX VALUE(00000200)	1391	
46	@NVLD	ABSOLUTE. HEX VALUE(000006D0)	1212 1226 1228 1234 1245 1247 1253 1302 1307	
38	@QUES	ABSOLUTE. HEX VALUE(00000100)	1309 1315 1317 1319 1381 1394	
44	@QUXX	ABSOLUTE. HEX VALUE(00000400)	2021 2115	
45	@TUXX	ABSOLUTE. HEX VALUE(00000500)	2021 2115	
2180	BEGIN	ADDRESS. HEX LOCATION(0000331E) IN CSECT(I4820)	1877 1935 2015 2052 2055 2117	LENGTH(2)
2201	BIT0080	ABSOLUTE. HEX VALUE(00000080)	1878 2016 2055 2118	
2190	BUFPT	ADDRESS. HEX LOCATION(00003426) IN CSECT(I4820)	1883 2023	LENGTH(2)
1003	CE	ABSOLUTE. HEX VALUE(0000002A)	1261 1318 1489 1581	
1083	CICB	ABSOLUTE. HEX VALUE(00000014)	1233 1252 1566 1579	
1612	CLDCB	ADDRESS. HEX LOCATION(0000302C) IN CSECT(I4820)	1306 1465	LENGTH(2)
1001	CS	ABSOLUTE. HEX VALUE(00000028)	1306 1465	
1002	CSA	ABSOLUTE. HEX VALUE(00000029)	1225 1244 1314 1473 1480 1487 1557 1574	
1032	CSBUF	ADDRESS. HEX LOCATION(00002D10) IN CSECT(I4820)	1054 1209 1299 1378 1458 1546 2169 2206	LENGTH(1)
1651	CSDCB	ADDRESS. HEX LOCATION(0000306C) IN CSECT(I4820)	2166	LENGTH(2)
1034	CSTL2	ADDRESS. HEX LOCATION(00002D12) IN CSECT(I4820)	2167	LENGTH(2)
1040	CSTL8	ADDRESS. HEX LOCATION(00002D1E) IN CSECT(I4820)	522 587 593 605 608 617 620 626 629	LENGTH(2)
1022	DCBUF	ADDRESS. HEX LOCATION(00002D00) IN CSECT(I4820)	635 641 647 653 659 665 671 683 718	LENGTH(1)
2197	DC2PT	ADDRESS. HEX LOCATION(00003428) IN CSECT(I4820)	721 724 727 754 757 760 763 769 775	LENGTH(2)
105	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I4820)	560 578 677	LENGTH(1)
1017	DEV1	ADDRESS. HEX LOCATION(00002CF8) IN CSECT(I4820)	537 698	LENGTH(2)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1600	DGDCB	ADDRESS. HEX LOCATION(0000301C) IN CSECT(I4820) LENGTH(2)
1721	DIAGW	ADDRESS. HEX LOCATION(000030DE) IN CSECT(I4820) LENGTH(2)
67	DUMMY	ABSOLUTE. HEX VALUE(00000000)
781	ENIPT	ADDRESS. HEX LOCATION(00002794) IN CSECT(I4820) LENGTH(1)
47	EQ	ABSOLUTE. HEX VALUE(00000000)
994	ER	ABSOLUTE. HEX VALUE(00000021)
1069	EXIT	ABSOLUTE. HEX VALUE(00000006)
2199	FAKETU	ADDRESS. HEX LOCATION(0000342C) IN CSECT(I4820) LENGTH(2)
1617	FRDCB	ADDRESS. HEX LOCATION(0000303C) IN CSECT(I4820) LENGTH(2)
850	F00006	ADDRESS. HEX LOCATION(00002918) IN CSECT(I4820) LENGTH(1)
806	F00038	ADDRESS. HEX LOCATION(000027A2) IN CSECT(I4820) LENGTH(1)
814	F00067	ADDRESS. HEX LOCATION(000027EA) IN CSECT(I4820) LENGTH(1)
818	F00072	ADDRESS. HEX LOCATION(000027FC) IN CSECT(I4820) LENGTH(1)
822	F00081	ADDRESS. HEX LOCATION(0000280E) IN CSECT(I4820) LENGTH(1)
826	F00092	ADDRESS. HEX LOCATION(00002830) IN CSECT(I4820) LENGTH(1)
830	F00115	ADDRESS. HEX LOCATION(00002842) IN CSECT(I4820) LENGTH(1)
836	F00120	ADDRESS. HEX LOCATION(0000288A) IN CSECT(I4820) LENGTH(1)
842	F00145	ADDRESS. HEX LOCATION(000028D8) IN CSECT(I4820) LENGTH(1)
846	F00148	ADDRESS. HEX LOCATION(000028FE) IN CSECT(I4820) LENGTH(1)
856	F00164	ADDRESS. HEX LOCATION(00002956) IN CSECT(I4820) LENGTH(1)
864	F00176	ADDRESS. HEX LOCATION(00002998) IN CSECT(I4820) LENGTH(1)
870	F00186	ADDRESS. HEX LOCATION(000029EA) IN CSECT(I4820) LENGTH(1)
876	F00198	ADDRESS. HEX LOCATION(00002A3C) IN CSECT(I4820) LENGTH(1)
880	F00205	ADDRESS. HEX LOCATION(00002A56) IN CSECT(I4820) LENGTH(1)
884	F00213	ADDRESS. HEX LOCATION(00002A76) IN CSECT(I4820) LENGTH(1)
890	F00225	ADDRESS. HEX LOCATION(00002AAE) IN CSECT(I4820) LENGTH(1)
894	F00233	ADDRESS. HEX LOCATION(00002ACE) IN CSECT(I4820) LENGTH(1)
898	F00243	ADDRESS. HEX LOCATION(00002AF0) IN CSECT(I4820) LENGTH(1)
902	F00247	ADDRESS. HEX LOCATION(00002AF6) IN CSECT(I4820) LENGTH(1)
916	F00285	ADDRESS. HEX LOCATION(00002E92) IN CSECT(I4820) LENGTH(1)
920	F00288	ADDRESS. HEX LOCATION(00002BB2) IN CSECT(I4820) LENGTH(1)
924	F00291	ADDRESS. HEX LOCATION(00002BD4) IN CSECT(I4820) LENGTH(1)
930	F00322	ADDRESS. HEX LOCATION(00002C0A) IN CSECT(I4820) LENGTH(1)
934	F00325	ADDRESS. HEX LOCATION(00002C28) IN CSECT(I4820) LENGTH(1)
938	F00328	ADDRESS. HEX LOCATION(00002C46) IN CSECT(I4820) LENGTH(1)
942	F00339	ADDRESS. HEX LOCATION(00002C74) IN CSECT(I4820) LENGTH(1)
946	F00348	ADDRESS. HEX LOCATION(00002C94) IN CSECT(I4820) LENGTH(1)
950	F00350	ADDRESS. HEX LOCATION(00002CA2) IN CSECT(I4820) LENGTH(1)
2205	HEBLK	ADDRESS. HEX LOCATION(0000342E) IN CSECT(I4820) LENGTH(2)
1089	HTOE	ABSOLUTE. HEX VALUE(0000001A)
1065	IDLE	ABSOLUTE. HEX VALUE(00000002)
996	IN	ABSOLUTE. HEX VALUE(00000023)
2072	INTBL	ADDRESS. HEX LOCATION(00003272) IN CSECT(I4820) LENGTH(2)
1969	INTEK	ADDRESS. HEX LOCATION(000031DA) IN CSECT(I4820) LENGTH(2)
1978	INTES	ADDRESS. HEX LOCATION(000031F2) IN CSECT(I4820) LENGTH(2)
1982	INTET	ADDRESS. HEX LOCATION(000031FA) IN CSECT(I4820) LENGTH(2)
2009	INTOK	ADDRESS. HEX LOCATION(000031FE) IN CSECT(I4820) LENGTH(2)
2031	INTRX	ADDRESS. HEX LOCATION(0000322E) IN CSECT(I4820) LENGTH(2)
2012	INTR1	ADDRESS. HEX LOCATION(00003206) IN CSECT(I4820) LENGTH(2)
2017	INTR2	ADDRESS. HEX LOCATION(00003214) IN CSECT(I4820) LENGTH(1)
2025	INTR3	ADDRESS. HEX LOCATION(00003222) IN CSECT(I4820) LENGTH(2)
2063	IOBLK	ADDRESS. HEX LOCATION(00003266) IN CSECT(I4820) LENGTH(2)
2065	IODCB	ADDRESS. HEX LOCATION(0000326A) IN CSECT(I4820) LENGTH(2)
2066	IOMOD	ADDRESS. HEX LOCATION(0000326C) IN CSECT(I4820) LENGTH(2)
37	I4820	CSECT. START(00002500) LENGTH(3892) ESDID(0)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
2186	LINE1	ADDRESS. HEX LOCATION(00003356) IN CSECT(I4820) LENGTH(40)
1016	LSTIO	ADDRESS. HEX LOCATION(00002CF6) IN CSECT(I4820) LENGTH(2)
993	MI	ABSOLUTE. HEX VALUE(00000020)
2157	MVBUF	ADDRESS. HEX LOCATION(000032D6) IN CSECT(I4820) LENGTH(2)
59	MX	ABSOLUTE. HEX VALUE(00000204)
1005	NG	ABSOLUTE. HEX VALUE(0000002C)
1000	NI	ABSOLUTE. HEX VALUE(00000027)
519	N00001	ADDRESS. HEX LOCATION(00002608) IN CSECT(I4820) LENGTH(2)
522	N00002	ADDRESS. HEX LOCATION(0000260C) IN CSECT(I4820) LENGTH(2)
525	N00003	ADDRESS. HEX LOCATION(00002610) IN CSECT(I4820) LENGTH(2)
537	N00004	ADDRESS. HEX LOCATION(00002622) IN CSECT(I4820) LENGTH(2)
539	N00005	ADDRESS. HEX LOCATION(00002624) IN CSECT(I4820) LENGTH(2)
551	N00006	ADDRESS. HEX LOCATION(00002636) IN CSECT(I4820) LENGTH(2)
560	N00007	ADDRESS. HEX LOCATION(0000264A) IN CSECT(I4820) LENGTH(2)
566	N00008	ADDRESS. HEX LOCATION(00002656) IN CSECT(I4820) LENGTH(2)
578	N00009	ADDRESS. HEX LOCATION(00002668) IN CSECT(I4820) LENGTH(2)
584	N00010	ADDRESS. HEX LOCATION(00002674) IN CSECT(I4820) LENGTH(2)
587	N00011	ADDRESS. HEX LOCATION(00002678) IN CSECT(I4820) LENGTH(2)
590	N00012	ADDRESS. HEX LOCATION(0000267C) IN CSECT(I4820) LENGTH(2)
593	N00013	ADDRESS. HEX LOCATION(00002680) IN CSECT(I4820) LENGTH(2)
596	N00014	ADDRESS. HEX LOCATION(00002684) IN CSECT(I4820) LENGTH(2)
599	N00015	ADDRESS. HEX LOCATION(00002688) IN CSECT(I4820) LENGTH(2)
602	N00016	ADDRESS. HEX LOCATION(0000268C) IN CSECT(I4820) LENGTH(2)
605	N00017	ADDRESS. HEX LOCATION(00002690) IN CSECT(I4820) LENGTH(2)
608	N00018	ADDRESS. HEX LOCATION(00002694) IN CSECT(I4820) LENGTH(2)
611	N00019	ADDRESS. HEX LOCATION(00002698) IN CSECT(I4820) LENGTH(2)
614	N00020	ADDRESS. HEX LOCATION(0000269C) IN CSECT(I4820) LENGTH(2)
617	N00021	ADDRESS. HEX LOCATION(000026A0) IN CSECT(I4820) LENGTH(2)
620	N00022	ADDRESS. HEX LOCATION(000026A4) IN CSECT(I4820) LENGTH(2)
623	N00023	ADDRESS. HEX LOCATION(000026A8) IN CSECT(I4820) LENGTH(2)
626	N00024	ADDRESS. HEX LOCATION(000026AC) IN CSECT(I4820) LENGTH(2)
629	N00025	ADDRESS. HEX LOCATION(000026B0) IN CSECT(I4820) LENGTH(2)
632	N00026	ADDRESS. HEX LOCATION(000026B4) IN CSECT(I4820) LENGTH(2)
635	N00027	ADDRESS. HEX LOCATION(000026B8) IN CSECT(I4820) LENGTH(2)
638	N00028	ADDRESS. HEX LOCATION(000026BC) IN CSECT(I4820) LENGTH(2)
641	N00029	ADDRESS. HEX LOCATION(000026C0) IN CSECT(I4820) LENGTH(2)
644	N00030	ADDRESS. HEX LOCATION(000026C4) IN CSECT(I4820) LENGTH(2)
647	N00031	ADDRESS. HEX LOCATION(000026C8) IN CSECT(I4820) LENGTH(2)
650	N00032	ADDRESS. HEX LOCATION(000026CC) IN CSECT(I4820) LENGTH(2)
653	N00033	ADDRESS. HEX LOCATION(000026D0) IN CSECT(I4820) LENGTH(2)
656	N00034	ADDRESS. HEX LOCATION(000026D4) IN CSECT(I4820) LENGTH(2)
659	N00035	ADDRESS. HEX LOCATION(000026D8) IN CSECT(I4820) LENGTH(2)
662	N00036	ADDRESS. HEX LOCATION(000026DC) IN CSECT(I4820) LENGTH(2)
665	N00037	ADDRESS. HEX LOCATION(000026E0) IN CSECT(I4820) LENGTH(2)
668	N00038	ADDRESS. HEX LOCATION(000026E4) IN CSECT(I4820) LENGTH(2)
671	N00039	ADDRESS. HEX LOCATION(000026E8) IN CSECT(I4820) LENGTH(2)
674	N00040	ADDRESS. HEX LOCATION(000026EC) IN CSECT(I4820) LENGTH(2)
677	N00041	ADDRESS. HEX LOCATION(000026F0) IN CSECT(I4820) LENGTH(2)
683	N00042	ADDRESS. HEX LOCATION(000026FC) IN CSECT(I4820) LENGTH(2)
686	N00043	ADDRESS. HEX LOCATION(00002700) IN CSECT(I4820) LENGTH(2)
698	N00044	ADDRESS. HEX LOCATION(00002712) IN CSECT(I4820) LENGTH(2)
700	N00045	ADDRESS. HEX LOCATION(00002714) IN CSECT(I4820) LENGTH(2)
709	N00046	ADDRESS. HEX LOCATION(00002726) IN CSECT(I4820) LENGTH(2)
712	N00047	ADDRESS. HEX LOCATION(0000272A) IN CSECT(I4820) LENGTH(2)
715	N00048	ADDRESS. HEX LOCATION(0000272E) IN CSECT(I4820) LENGTH(2)
718	N00049	ADDRESS. HEX LOCATION(00002732) IN CSECT(I4820) LENGTH(2)
721	N00050	ADDRESS. HEX LOCATION(00002736) IN CSECT(I4820) LENGTH(2)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
724	N00051	462 716 ADDRESS. HEX LOCATION(0000273A) IN CSECT(I4820) LENGTH(2)
727	N00052	465 713 ADDRESS. HEX LOCATION(0000273E) IN CSECT(I4820) LENGTH(2)
730	N00053	468 710 ADDRESS. HEX LOCATION(00002742) IN CSECT(I4820) LENGTH(2)
739	N00054	471 701 ADDRESS. HEX LOCATION(00002754) IN CSECT(I4820) LENGTH(2)
742	N00055	474 ADDRESS. HEX LOCATION(00002758) IN CSECT(I4820) LENGTH(2)
751	N00056	477 ADDRESS. HEX LOCATION(0000276A) IN CSECT(I4820) LENGTH(2)
754	N00057	480 ADDRESS. HEX LOCATION(0000276E) IN CSECT(I4820) LENGTH(2)
757	N00058	483 ADDRESS. HEX LOCATION(00002772) IN CSECT(I4820) LENGTH(2)
760	N00059	486 752 ADDRESS. HEX LOCATION(00002776) IN CSECT(I4820) LENGTH(2)
763	N00060	489 743 ADDRESS. HEX LOCATION(0000277A) IN CSECT(I4820) LENGTH(2)
766	N00061	492 740 ADDRESS. HEX LOCATION(0000277E) IN CSECT(I4820) LENGTH(2)
769	N00062	495 731 ADDRESS. HEX LOCATION(00002782) IN CSECT(I4820) LENGTH(2)
772	N00063	498 ADDRESS. HEX LOCATION(00002786) IN CSECT(I4820) LENGTH(2)
775	N00064	501 767 ADDRESS. HEX LOCATION(0000278A) IN CSECT(I4820) LENGTH(2)
778	N00065	504 ADDRESS. HEX LOCATION(0000278E) IN CSECT(I4820) LENGTH(2)
58	OF	507 773 ABSOLUTE. HEX VALUE(00000202)
958	OPTN1	509 ADDRESS. HEX LOCATION(00002CEA) IN CSECT(I4820) LENGTH(2)
981	OPTN3	1210 1300 1379 1459 1547 1971 2011 ADDRESS. HEX LOCATION(00002CEE) IN CSECT(I4820) LENGTH(2)
101	PARMARA	2058 2106 ADDRESS. HEX LOCATION(0000196E) IN CSECT(I4820) LENGTH(1)
69	PID	535 549 558 576 696 707 737 749 ADDRESS. HEX LOCATION(00001800) IN CSECT(I4820) LENGTH(1)
2200	PIDMSG10	71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 ABSOLUTE. HEX VALUE(00001F0)
1075	PREP	2165 ABSOLUTE. HEX VALUE(0000000C)
1684	RDDCB	2120 ADDRESS. HEX LOCATION(0000309C) IN CSECT(I4820) LENGTH(2)
1086	RELSD	1787 1790 ABSOLUTE. HEX VALUE(00000017)
1085	REQSD	2175 ABSOLUTE. HEX VALUE(00000016)
1082	RICB	2108 ABSOLUTE. HEX VALUE(00000013)
1628	RSDCB	2177 ADDRESS. HEX LOCATION(0000304C) IN CSECT(I4820) LENGTH(2)
1021	SCTID	1781 ADDRESS. HEX LOCATION(00002CF8) IN CSECT(I4820) LENGTH(2)
1639	SKDCB	1635 1782 1783 2173 ADDRESS. HEX LOCATION(0000305C) IN CSECT(I4820) LENGTH(2)
1073	START	1222 1223 1224 1242 1243 1310 1311 1312 1313 1469 1470 1471 1472 1477 1478 1479 1484 1485 1486 1553 1554 1555 1556 1572 1573 1775 ABSOLUTE. HEX VALUE(0000000A)
104	SUPSTAT	1885 ADDRESS. HEX LOCATION(000019C4) IN CSECT(I4820) LENGTH(1)
1047	SVCAL	2168 ADDRESS. HEX LOCATION(00002D2C) IN CSECT(I4820) LENGTH(2)
95	TUBUFF	2107 2173 2174 ADDRESS. HEX LOCATION(000018C2) IN CSECT(I4820) LENGTH(1)
92	TUMSGWTR	1218 ADDRESS. HEX LOCATION(000018BA) IN CSECT(I4820) LENGTH(1)
76	TUPARM1	2170 ADDRESS. HEX LOCATION(0000189A) IN CSECT(I4820) LENGTH(1)
77	TUPARM2	1313 1472 1555 1556 1564 ADDRESS. HEX LOCATION(0000189C) IN CSECT(I4820) LENGTH(1)
78	TUPARM3	1479 1570 ADDRESS. HEX LOCATION(0000189E) IN CSECT(I4820) LENGTH(1)
98	TURESUL	1486 ADDRESS. HEX LOCATION(000018C8) IN CSECT(I4820) LENGTH(1)
1045	TURTN	1214 1215 1216 1217 1238 1239 1257 1258 1383 1384 1385 1386 1387 1388 1395 1396 1397 1398 ADDRESS. HEX LOCATION(00002D28) IN CSECT(I4820) LENGTH(2)
74	TUSTATUS	1208 1298 1377 1457 1545 2178 ADDRESS. HEX LOCATION(00001818) IN CSECT(I4820) LENGTH(1)
75	TUWORK	2148 ADDRESS. HEX LOCATION(0000181A) IN CSECT(I4820) LENGTH(1)
1208	T4851	2352 2207 ADDRESS. HEX LOCATION(00002D38) IN CSECT(I4820) LENGTH(4)
1298	T4852	541 ADDRESS. HEX LOCATION(00002E12) IN CSECT(I4820) LENGTH(4)
1377	T4853	527 688 ADDRESS. HEX LOCATION(00002E66) IN CSECT(I4820) LENGTH(4)
1457	T4854	568 ADDRESS. HEX LOCATION(00002F02) IN CSECT(I4820) LENGTH(4)
1545	T4856	553 ADDRESS. HEX LOCATION(00002F86) IN CSECT(I4820) LENGTH(4)
1264	T51F	702 732 744 ADDRESS. HEX LOCATION(00002E0E) IN CSECT(I4820) LENGTH(4)
1238	T51K	1262 ADDRESS. HEX LOCATION(00002DAC) IN CSECT(I4820) LENGTH(6)
1257	T51L	1236 ADDRESS. HEX LOCATION(00002DF8) IN CSECT(I4820) LENGTH(6)
1239	T51R	1255 ADDRESS. HEX LOCATION(00002DB2) IN CSECT(I4820) LENGTH(6)
1242	T511	1237 ADDRESS. HEX LOCATION(00002DBC) IN CSECT(I4820) LENGTH(6)
1261	T512	1240 ADDRESS. HEX LOCATION(00002E08) IN CSECT(I4820) LENGTH(4)
1403	T53A	1256 1259 ADDRESS. HEX LOCATION(00002ECC) IN CSECT(I4820) LENGTH(6)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
1407	T53B	1401 ADDRESS. HEX LOCATION(00002EDC) IN CSECT(I4820) LENGTH(6)
1412	T53C	1405 ADDRESS. HEX LOCATION(00002EEE) IN CSECT(I4820) LENGTH(2)
1413	T53D	1408 1410 ADDRESS. HEX LOCATION(00002EF0) IN CSECT(I4820) LENGTH(6)
1419	T53X	1411 ADDRESS. HEX LOCATION(00002EFE) IN CSECT(I4820) LENGTH(4)
1417	T53Z	1414 1416 ADDRESS. HEX LOCATION(00002EFC) IN CSECT(I4820) LENGTH(2)
1489	T54E	1392 ADDRESS. HEX LOCATION(00002F7C) IN CSECT(I4820) LENGTH(4)
1492	T54F	1461 1466 1468 1474 1476 1481 1483 1488 ADDRESS. HEX LOCATION(00002F82) IN CSECT(I4820) LENGTH(4)
1581	T56E	1490 ADDRESS. HEX LOCATION(00003012) IN CSECT(I4820) LENGTH(4)
1584	T56F	1549 1558 1560 1567 1569 1571 1575 1577 1580 ADDRESS. HEX LOCATION(00003018) IN CSECT(I4820) LENGTH(4)
1673	VRDCB	1582 ADDRESS. HEX LOCATION(0000308C) IN CSECT(I4820) LENGTH(2)
1662	WRDCB	1219 1229 1230 1231 1232 1248 1249 1250 1251 1561 1562 1563 1564 1565 1578 1793 ADDRESS. HEX LOCATION(0000307C) IN CSECT(I4820) LENGTH(2)
997	XE	1796 ABSOLUTE. HEX VALUE(00000024)
995	XI	1978 2040 ABSOLUTE. HEX VALUE(00000022)
1859	XIO	1884 2025 ADDRESS. HEX LOCATION(00003168) IN CSECT(I4820) LENGTH(4)
2040	XIOCK	1776 1779 1784 1791 1794 1797 1800 ADDRESS. HEX LOCATION(00003230) IN CSECT(I4820) LENGTH(2)
2047	XIOCO	1894 ADDRESS. HEX LOCATION(00003242) IN CSECT(I4820) LENGTH(2)
1864	XIOCS	2045 ADDRESS. HEX LOCATION(00003172) IN CSECT(I4820) LENGTH(6)
2049	XIOCV	2056 ADDRESS. HEX LOCATION(00003246) IN CSECT(I4820) LENGTH(2)
2058	XIOCX	2043 ADDRESS. HEX LOCATION(00003260) IN CSECT(I4820) LENGTH(4)
1933	XIOER	2050 ADDRESS. HEX LOCATION(000031CE) IN CSECT(I4820) LENGTH(2)
1868	XIO1	2064 ADDRESS. HEX LOCATION(00003182) IN CSECT(I4820) LENGTH(4)
1881	XIO2	1803 1860 ADDRESS. HEX LOCATION(000031A8) IN CSECT(I4820) LENGTH(2)
1893	XIO8	1867 ADDRESS. HEX LOCATION(000031EC) IN CSECT(I4820) LENGTH(2)
62	XTRNL	1898 ABSOLUTE. HEX VALUE(00000001)

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