

\$\$ 1245T ENTERED 4.0*1X AT 09.309 ON 12/27/79 T/S 0-08-05

```

0001 $      SNUMB  1245T
0002 $      COMMENT TSSUNIT          TSS CARDIN
0003 $$     USERID  TSSUNIT$
0004 $      IDENT  P20ABJ12,HAUGH    ,STATION-T
0005 AS     PROGRAM SALT,ON4
0006 $$     PRMFL  **R,R,TOOLS/SALT/STARSTAR
0007 $      NOTE   G*,COPY,ENDFC
0008 $$     PRMFL  G*,R,S,4VX/VSP/SRC/IOSO
0009 $      NOTE   G*
0010 $      DATA  A*,COPY,ENDFC
0011 $      ENDCOPY A*
0012 $      FILE   AB,A1S
0013 $      LIMITS 10,40K,,50K
0014 $      IF     ABORT,ENDJOB
0015 $      IF     18,00PS
0016 AS     GMAP   NDECK,NSAF,ON4
0017 $      LIMITS 10,40K,,50K
0018 $$     PRMFL  **R,R,4VX/MACROS/STARSTAR
0019 $      FILE   *1,,99L
0020 $$     PRMFL  G*,R,S,4VX/VSP/SRC/IOSO
0021 $      FILE   A*,A1R
0022 $ 00PS.
0023 $      ENDJOB
TOTAL CARD COUNT THIS JOB = 000024

```

* ACTY-01 \$CARD #0005 SALT 12/27/79 REAL MODE SW=000400000000

* NORMAL TERMINATION AT 000113 BA=000000200000 I=0502 SW=000400000000

START	9.310	LINES	2	PROC	0.0000	I/O	0.000	IU	5	MAXWST	41K
STOP	9.311	LNLMT	51200	TMLMT	0.1000	IOLMT		CU	5	MINWST	41K
SWAP	0.000	RUPGIN	0	BSPGIN	0	PGFLT	0	PGIOTM	0.000	PGOT	0
LAPSE	0.000	A/PSTK	8	SSSTK	7	M*T	129				

FC	D	TYPE	BUSY	IP/AT	FP/RT	IS/#C	MS/#E	ADDRESS	T#/PK#
**	R	MSU450 P	101	0	0	36	36R	0-08-06	
G*	R	MSU450 X	0	0	0	222	222		
G*	R	MSU450						0-08-08	C418 ONL
A*	R	MSU450 *	103	0	0	1	12	0-08-02	
AB	S	MSU450 *	44	0	1	12	12	0-08-03	
P*		SYOUT							
*A	R	MSU450 *	17	0	0	*	300R	0-08-02	

RC-77 2 LINES

* ACTY-02 \$CARD #0016 GMAP 12/27/79 REAL MODE SW=201400000000

* NORMAL TERMINATION AT 006536 BA=000000200000 I=0500 SW=201400000000

START	9.312	LINES	13835	PROC	0.0188	I/O	0.011	IU	5	MAXWST	53K
STOP	9.395	LNLMT	51200	TMLMT	0.1000	IOLMT		CU	5	MINWST	41K
SWAP	0.000	RUPGIN	0	BSPGIN	0	PGFLT	0	PGIOTM	0.000	PGOT	0
LAPSE	0.083	A/PSTK	8	SSSTK	7	M*T	31556				

FC	D	TYPE	BUSY	IP/AT	FP/RT	IS/#C	MS/#E	ADDRESS	T#/PK#
A*	R	MSU450 *	115	1	1	12	12	0-08-05	
D*	R	MSU450 *	37	0	1	1	1	0-08-04	
**	R	MSU450 X	2483	0	0	4000	4000R		
**	R	MSU450						0-08-08	C418 ONL
*1	R	MSU450 *	22190	0	0	1188	1188	0-08-04	
G*	R	MSU450 X	4910	0	222	222	222		
G*	R	MSU450						0-08-08	C418 ONL
P*		SYOUT							
K*		SYOUT							
C*		SYOUT							
*A	R	MSU450 *	20	0	0	*	24R	0-08-04	

RC-77 2 LINES
LIST 13832 LINES
RC-73 1 LINES

SNUMB = 1245T, ACTIVITY # = 01, , REPORT CODE = 77, RECORD COUNT = 000002

1\$\$

UPDATE LIST

SNUMB = 1245T, ACTIVITY # = 02, , REPORT CODE = 77, RECORD COUNT = 000002

1\$\$

UPDATE LIST

SNUMB = 1245T, ACTIVITY # = 02, , REPORT CODE = 74, RECORD COUNT = 013832

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* (C) COPYRIGHT 1977 BY TOKYO SHIBAURA ELECTRIC COMPANY LIMITED *

PREFACE

THIS PROGRAM WILL BE LOADED MOD 8.

PROGRAM BREAK 16644
COMMON LENGTH 0
V COUNT BITS 5

PRIMARY SYMDEF ENTRY

..IOS 0
.IIOS 120

1 LBL IOS0,H6600J7.002 IOS00025
 2 TTL H6600J7.002 I/O SUPERVISOR 791219IOS0
 3 CPR H,1978 IOS00035
 4 CPR T,1977 COPRIGHT STATEMENT
 5 LODM .A6MCR
 6 LODM .A6MAC
 7 LCDM .A6IOS
 8 LODST .A6IOE
 9 LODST TPTP.Y ITP SYMBOLS 29FW0340

000000
 000000
 000000
 000000
 000000
 000000
 000000
 000000
 000000

10 *
 11 .ENTRY IOS,
 12 ETC [IOTRM,EP2,EP3,EP4,INOS,EXTMEM,SPUNK,PINT,FLTIO, ANON1400
 13 ETC GSTRT,EP1RET,RSMCH,ACTFL,IGNOR,ASTIO,DELTE,DELTE,DELTE, 16FW0060
 14 ETC DELTE,DELTE,DELTE,MSCIO,MSCSK,MSEOF,IMAP,DELTE,
 15 ETC DELTE,EP28,EP29,RESET,DCCON,UNLNK,RLKCC,LKBYTE,
 16 ETC PMMIOS,SCALIO,EP37,EP38,EP39,EP40,
 17 ETC EP41,EP42,EP43,EP44,EP45,EP46,
 18 ETC DELTE,DELTE,DELTE,DELTE,NWCAIO],
 19 ETC SHCM,(INIT,PRIVTY),,0

000000 004002012004 000
 000001 000120 7102 04 121
 000002 004001 7102 04 4003
 000003 004000 7102 04 4003
 000004 004402 7102 04 4406
 000005 004407 7102 04 4414
 000006 003712 7102 04 3720
 000007 006611 7102 04 6620
 000010 000221 7102 04 231
 000011 005415 7102 04 5426
 000012 006610 7102 04 6622
 000013 001657 7102 04 1672
 000014 006642 7102 04 6656
 000015 006652 7102 04 6667
 000016 000141 7102 04 157
 000017 007321 7102 04 7340
 000020 000074 7102 04 114
 000021 000073 7102 04 114
 000022 000072 7102 04 114
 000023 000071 7102 04 114
 000024 000070 7102 04 114
 000025 000067 7102 04 114
 000026 010704 7102 04 10732
 000027 011157 7102 04 11206
 000030 011475 7102 04 11525
 000031 000037 7102 04 70
 000032 000062 7102 04 114
 000033 000061 7102 04 114
 000034 003745 7102 04 4001
 000035 003742 7102 04 3777
 000036 012037 7102 04 12075
 000037 012060 7102 04 12117

..IOS VFD 3/0,1/0,3/.F,11/.MIOS,12/.IIOS,4/1,2/0
 TRA IOTRM,\$ 1
 TRA EP2,\$ 2
 TRA EP3,\$ 3
 TRA EP4,\$ 4
 TRA INOS,\$ 5
 TRA EXTMEM,\$ 6
 TRA SPUNK,\$ 7
 TRA PINT,\$ 8
 TRA FLTIO,\$ 9
 TRA GSTRT,\$ 10
 TRA EP1RET,\$ 11
 TRA RSMCH,\$ 12
 TRA ACTFL,\$ 13
 TRA IGNOR,\$ 14
 TRA ASTIO,\$ 15
 TRA DELTE,\$ 16
 TRA DELTE,\$ 17
 TRA DELTE,\$ 18
 TRA DELTE,\$ 19
 TRA DELTE,\$ 20
 TRA DELTE,\$ 21
 TRA MSCIO,\$ 22
 TRA MSCSK,\$ 23
 TRA MSEOF,\$ 24
 TRA IMAP,\$ 25
 TRA DELTE,\$ 26
 TRA DELTE,\$ 27
 TRA EP28,\$ 28
 TRA EP29,\$ 29
 TRA RESET,\$ 30
 TRA DCCON,\$ 31

000040	012115	7102	04	12155	TRA	UNLNK,\$	32
000041	012315	7102	04	12356	TRA	RLKCC,\$	33
000042	013454	7102	04	13516	TRA	LKBYTE,\$	34
000043	005437	7102	04	5502	TRA	PMMIOS,\$	35
000044	005552	7102	04	5616	TRA	SCALIO,\$	36
000045	012332	7102	04	12377	TRA	EP37,\$	37
000046	012335	7102	04	12403	TRA	EP38,\$	38
000047	012350	7102	04	12417	TRA	EP39,\$	39
000050	012365	7102	04	12435	TRA	EP40,\$	40
000051	012366	7102	04	12437	TRA	EP41,\$	41
000052	012367	7102	04	12441	TRA	EP42,\$	42
000053	012370	7102	04	12443	TRA	EP43,\$	43
000054	012411	7102	04	12465	TRA	EP44,\$	44
000055	012402	7102	04	12457	TRA	EP45,\$	45
000056	012411	7102	04	12467	TRA	EP46,\$	46
000057	000035	7102	04	114	TRA	DELTE,\$	47
000060	000034	7102	04	114	TRA	DELTE,\$	48
000061	000033	7102	04	114	TRA	DELTE,\$	49
000062	000032	7102	04	114	TRA	DELTE,\$	50
000063	005533	7102	04	5616	TRA	NWCAIO,\$	51
000064	071101020102			000	BCI	1,791212	
000065	071101020111			000	TTLDAT		
000066	010202070711			000	DATE		

000067	071101020105			000	20	INHIB	OFF
	510006				23	BCI	1,791215
	000002				24	.FLOST	BOOL 510006
	770000				25	.FJSTR	BOOL 2
	000057				26	.FCSUB	BOOL 770000
	000060				27	.WTIMR	EQU 47
	037777				28	DISOPT	BOOL 60
	000003				29	.FADJ	BOOL 37777
	000010				30	.OFFS	EQU 3
	000020				31	CFG	BOOL 10
					32	.FEXTC	BOOL 20

LOST INTERRUPT STATUS	IOS04AAM
J* I/O FLAG	IOS04AAM
	IOS04AAM
	LCC01270
TIMER REGISTER STORE IN S/S FRAME	IOS01035
REDISPATCH OPTION WORD (0=NO REDISPAT	IOS01040
ADJACENT PAT BODY FLAG	IOS01045
ADJACENT PAT BODY CFFSET	IOS01050
	ANON0980
	14FW1830

33			
34			
35 *	EP #1	IOTRM- INTERRUPT HANLER RENTRY	
36 *	EP #2	EP2- (LINKF) LINK AT HEAD	
37 *	EP #3	EP3- (LINKF) LINK AT HEAD (GEEPR REISSUE)	
38 *	EP #4	EP4- (QUEUE) GET AN I/O ENTRY	
39 *	EP #5	INOS- GEINOS PROCESSOR	
40 *	EP #6	EXTMEM- EXTENDED MEMORY LINK REQUEST	IOS01060
41 *	EP #7	SPUNK- SPECIAL .ULINK INTERFACE FOR DNET	
42 *	EP #8	PINT- PROGRAMMED INTERRUPT ENTRY	ANON1420
43 *	EP #9	FLTIO- VICARIOUS FAULT INTERFACE	IOS01070
44 *	EP #10	GSTRT- RETURN STATUS (GEPR)	
45 *	EP #11	EP1RET RETURN ADDR FROM CHANNEL MOD.	
46 *	EP #12	RSMCH- RESUME I/O ON CHANNEL	
47 *	EP #13	ACTFL- PROCESS ACCT FILE REQUEST	
48 *	EP #14	DELTE-	
49 *	EP #15	ASTIO - START I/O	
50 *	EP #16	DELTE-	

51 *	EP #17	DELTE-	
52 *	EP #18	DELTE-	
53 *	EP #19	DELTE-	
54 *	EP #20	DELTE-	
55 *	EP #21	DELTE-	
56 *	EP #22	MSCIO- COMMON MASS STORAGE I/O REQUEST HANDLER	
57 *	EP #23	MSCSK- COMMON MASS STORAGE SEEK CALCULATION	
58 *	EP #24	MSEOF- COMMON MASS STORAGE END OF FILE RECOVERY	
59 *	EP #25	IMAP- EP FOR INTERRUPT MAPPING PROCESS -- OBSOLETE	
60 *	EP #26	MAP PCINTER FOR DNET	EL8.
61 *	EP #27	IMW POINTER FOR DNET	EL8.
62 *	EP #28	EP28- (.LINK) LINK AT END	
63 *	EP #29	EP29- (.LINKS) SPECIAL LINK	
64 *	EP #30	RESET-ISSUE RESET PCW TO PSIA CHANNEL	
65 *	EP #31	DCCON- ISSUE CONNECT ON IOM DIRECT DATA CHANNEL	
66 *	EP #32	UNLNK- UNLINK I/O AND COURTESY CALLS	
67 *	EP #33	RLKCC- RELINK COURTESY CALL	
68 *	EP #34	LKBYTE- SHARED ACCESS MPC LOCK BYTE REQUESTS	
69 *	EP #35	CALLIO- PMME CALLIC	
70 *	EP #36	SCAIO- .CALL CALLIC	
71 *	EP #37	EP37- (.QUEUEUS) GET AN SYSTEM I/O ENTRY	
72 *	EP #38	EP38- (.ULINK) UNLINK AN I/O ENTRY	
73 *	EP #39	EP39- (SKWPT) LINK,LLINK SEEK CALCULATION WITH PAT	
74 *	EP #40	EP40- (MSKWPT) MULTIRECORD SEEK CALCULATION WITH PAT	
75 *	EP #41	EP41- (DBSCR) DIAGNOSTIC BLOCK SEEK CALCULATION	
76 *	EP #42	EP42- (LSKWA) LINK SEEK CALCULATION WITH ABSOLUTE BLOCK	
77 *	EP #43	EP43- (LLSKWA) LLINK SEEL CALCULATION WITH ABSOLUTE BLOCK	
78 *	EP #44	EP44- (CVBCH) ROUTINE TO CONVERT BLOCK# TO CYL#, HEAD#	
79 *	EP #45	EP45- (CHBLK) ROUTINE TO MAKE HEADER BLOCK CALCULATION	
80 *	EP #46	EP46- (CVCHB) ROUTINE TO CONVERT CYL#, HEAD# TO BLOCK#	
81 *	EP #47	IF SET ZERO, I/O CHAIN DEBUG OPTION	IOS01080
82 *	EP #48	IF SET ZERO, CONDITIONAL DISPATCH OPTION	IOS01085
83 *	EP #49	IF SET ZERO, STATUS MODIFIER OPTION	IOS01090
84 *	EP #50	IF SET ZERO, DISK I/O MONITOR OPTION	IOS01095
85 *	EP #51	NWCAIO- NON WIRED CALLIO	

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SLAVE ABORT CODES GENERATED BY THE I/O SUPERVISOR

94	*	OCT	DEC	ABORT CODE	REASON FOR ABORT	CLOSEST PRIOR SYMBOL
95						
96	*	---	---	-----	-----	-----
97						
98						
99	*	36	30	I3	FILE CODE NOT FOUND OR ZERO	FCER EP51 25FWC330 INAI3 EP5 25FWC340
100	*					
101						
102	*	37	31	I5	NO GEINOS FILE POINTER	INAI5 EP5 ITP.1500
103						
104	*	40	32	I7	ACCESS BEYOND FILE	ABPGM I/O EXIT 5
105						
106	*	42	34	K3	INVALID EP6 CALL	NEXTM EP6 ITP.1520
107						
108	*	43	35	K4	INVALID DCW POINTER	IVDCW DCWCK ITP.1540
109						
110	*	45	37	K6	ILLEGAL COMMAND FOR FILE	INDTR I/O EXIT 1
111						
112	*	47	39	K1	INVALID I/O ON DEVICE	INAK8 I/O EXIT 6
113						
114	*	107	71	K4	ILLEGAL SEEK DATA ADDRESS	IABSA I/O EXIT 6
115						
116	*	114	76		INVALID I/O SCT POINTER	SETFBT,INDTR ITP.1580 DSDR7,SCTG1 ITP.1590
117	*					RETYN ITP.1600
118	*					
119						
120	*	115	77		IMPERMISSIBLE PERM WRITE	PERMS I/O EXIT 7
121						
122	*	116	78		IMPERMISSIBLE PERM READ	PERMS I/O EXIT 7
123						
124	*	117	79	D2	IDS RECORD TOO LONG	CMI EP13
125						IOS01000
126	*	121	81		ILLEGAL MME PARAMETER	FLTIO EP9 ITP.1620
127						
128	*	164	116		PRESELECTED CHANNEL IS DEACTIVATED	ABRT EP1,2,3,29
129						
130	*	206	134	K19	OP/DESCR FLAG MISMATCH	ITYTWE EP5 ITP.1640
131						
132	*	207	135	K8	NO DESCRIPTOR SUPPLIED	NDATS EP5 ITP.1660
133						
134	*	210	136	K9	BAD DESC. BASE (EVEN)	BASER IOCALL
135						
136	*	211	137	K10	DESC.TYPE ERR FOR CC	EDESCE IOCALL
137						
138	*	212	138	K11	TOO BIG DATA REGION	DCWER IOCALL

153
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197 *
198

ADDRESS
FIELD

REASON FOR ZOP

CLOSEST PRIOR
SYMBOL

ZOP (ZERO OP. CODE) INSTRUCTIONS IN THE I/O SUPERVISOR

IMPROPER ENTRY POINT TO .MIOS USED

DELTE

16FW0080
16FW0090

FAULT CHANNEL INTERRUPT FROM IOM
---SYSTEM CONTROLLER FAULT

LIMBO INT. HDLR.

FAULT CHANNEL INTERRUPT FROM IOM
---INPUT/OUTPUT FAULT

LIMB01 INT. HDLR.

FAULT CHANNEL INTERRUPT FROM IOM
---PTP/PTW FAULT

LIMB02 INT. HDLR.

FAULT CHANNEL INTERRUPT FROM IOM
---UNDEFINE I/O FAULT

LIMB03 INT. HDLR.

SUSPEND COMMAND WAS ATTEMPTED ON
OTHER THAN PSIA CHANNEL ZERO.

SPDPSI INT. HDLR.

ACCOUNTING FILE SEEK ADDRESS ERROR
OTHER THAN LOGICAL E.O.F.

RLERR ACTFL CC

16FW0104

IOQ CHAIN DEBUG TRAP

DBZOP ULINK

EL8.
EL8.
EL8.
EL8.

FAULT CHANNEL QUE OVERFLOW

FAULT IHLR

NEGATIVE "LINKED" OR "IN TRANSMISSION"

ZOP11 ULNK

XXXX3980

COUNT OR "LINKED" COUNT IS LESS THAN
"IN TRANSMISSION" COUNT DURING UNLINK

NAME MISSING FROM SD.SCN TABLE FOR
THIS SYSTEM CONSOLE

LOOKN TYNAM

		000070	200	IMAP	NULL				
000070	000002	7100 04 000	201	DEBUG	TRA	2,IC	IF PRODUCTION MODE		16FW0260
			202	*	NOP		IF DEBUG MODE		16FW0270
			203	ZOP	MACRO				16FW0280
			204		VFD	H18/ZOP,10/0,8/#1			16FW0290
			205		ENDM	ZOP			16FW0300
			206	*					16FW0310
000071	000074	0020 00 010	207	DSTAT	TALLY	DQ,16	QUE IN		16FW0320
000072	000074	0020 00 010	208		TALLY	DQ,16	TALLY OUT		16FW0330
000073	000074	0020 00 010	209		TALLY	DQ,16	REFRESHER		16FW0340
		000074	210	DQ	BSS	16			16FW0350
			211	*					16FW0360
000114	000070	7160 00 010	212	DELTE	XEC	DEBUG			16FW0370
		000115	213		ZOP	1			16FW0380
000116	004015	7100 00 010	214		TRA	LNKRET	EXIT		EL8.
		017774	215	.FSCT1	BOOL	017774			
000117	017774	777777 000	216	.FSCT2	OCT	017774777777			
000120	015750	7100 00 010	217	.IIOS	TRA	INITM	INITIALIZE ROUTINE ENTRY		

INTERRUPT HANDLER - ACCEPT INTERRUPT

000000 220 *
 000004 221 P.PID SET P0
 000004 222 P.DDD SET P4
 000000 223 P.SS SET P4
 000005 224 P.PAT SET P0
 000005 225 P.IMW SET P5
 000005 226 P.B.CR SET P5
 000003 227 P.KL SET P3
 000002 228 P.RMS SET P2
 000001 229 P.IOQ SET P1

TYPE 0 DESC.

230 *
 231 *
 232 *
 233 *
 234 *
 235 *
 236 *
 237 *
 238 *
 239 *

ALL INTERRUPT PROCESSING BEGINS HERE.
 THE WIRED ENTRY DESCRIPTOR AT LOC. 30-31(OCTAL) IS
 EXECUTED AS A INWARD CLIMB WHEN INTERRUPT OCCURED.
 THIS ENTRY DESCRIPTOR WILL BE INITIALIZED BY START UP
 ROUTINE. LINKAGE SEGMENT MUST BE SYSTEM.

000121

238 INHIB ON
 240 IOTRM NULL

RETRIEUE SCU CLOCK AND INTERRUPT CELL# FROM S/S STACK
 ADJUST ODR6,7 AND X6,X7 TO KEEP SYSTEM REGISTER
 CONVENTION RULE.

241 *
 242 *
 243 *
 244 *
 245 *
 246 *
 247 *
 248 *
 249 *
 250 *
 251 *
 252 *
 253 *

ODR CONVENTION

P0---WORKING
 P1---(P.IOQ)
 P2---(P.RMS)
 P3---
 P4---(P.SS)
 P5---
 P6---SSA DATA SEG FOR POPM
 P7---SD.CR

000121 000000011207 000
 000122 006063 4726 07 000
 000123 000001 4502 00 010
 000124 000126 6202 00 010
 000125 200030 7403 00 000
 000126 001764 4746 07 000
 000127 001761 4746 07 000
 000130 006130 4776 07 000
 000131 006133 4736 07 000
 000132 006063 4726 07 000
 000133 700002 2313 00 000
 000134 000003 3752 07 000
 000135 000000 6272 05 000
 000136 000000 0116 00 000
 000137 700040 4133 00 000
 000140 400070 7573 00 000

254 ITIME ELDP
 255 STZ
 256 TMPP0 EAX0
 257 STX0
 258 IH LR LDP
 259 LDP
 260 LDP
 261 LDP
 262 LDP
 263 RSW
 264 ANA
 265 EAX7
 266 CCAC
 267 RSCR
 268 STAQ

P.RMS,SD.RMS,DL GET RMS DESCRIPTOR
 .IOS+1 CLEAR EP1
 IH LR
 24,P.RMS SET INTERRUPT ENTRY LOC
 P.SS,SSR,DL GET S/S DESCRIPTOR
 P.SS,CTYP,DL SET TYPE=0
 P.CR,SD.CR,DL LOAD P.CR DESC.
 P.KL,SD.KL,DL LOAD P.KL DESC.
 P.RMS,SD.RMS,DL
 2,P.CR
 3,DL
 0,AL PHYSICAL PROCESSOR #
 32,P.CR SCU CLOCK
 .WTEMP,P.SS SAVE IT FOR DELTA TIME

IOS01105
 ANON1350
 IOS01115
 IOS01120
 IOS01130
 IOS01135
 ANON0060
 ANON0070
 ANON0080
 IOS04AAM
 ANON0100
 ANON0110

INTERRUPT HANDLER - ACCEPT INTERRUPT

000141	700741	0543	00	000	269	AOS	.CRTIR,,P.CR	COUNT # OF INTERRUPTS FOR MONITOR	
000142	300060	2343	00	000	270	SZN	.KLIDI,,P.KL	IS IDLE TIME SET	11FW1210
000143	000002	6012	04	000	271	TNZ	2,IC	YES	11FW1220
000144	300060	7563	00	000	272	STQ	.KLIDI,,P.KL	NO, SET IT	11FW1230
					273	*			
					274	*	GET IMW WORD USING INTERRUPT CELL# IN S/S		
					275	*			
000145	400005	2363	00	000	276	LDQ	.WFTYP,,P.SS	GET CELL#	
000146	000023	7722	00	000	277	QRL	19		IOS01165
000147	000037	3762	07	000	278	ANQ	=037,DL	INTERRUPT CELL #	IOS01170
000150	006001	4756	07	000	279	LDP	P.IMW,SD.IMW,DL	GET IMW DESCRIPTOR	IOS01175
000151	002200	2252	06	010	280	LDX5	MAP,QL	GET IMW INDEX	IOS01180
000152	500000	0343	06	000	281	LDAC	0,QL,P.IMW	GET IMW	IOS01185
000153	000342	6002	00	010	282	TZE	WOOPS	WOCPS, NO BITS	IOS01190
000154	300107	2343	17	000	283	IOTA SZN	.KLINT,7,P.KL	IS THIS A RECURSION	XXXX2050
000155	000161	6002	00	010	284	TZE	IOU	NO	XXXX2060
000156	002240	2552	15	010	285	ORSA	IMW,5	YES, LOG INTERRUPT	XXXX2070
		000157			286	IGNOR OCLIMB		& EXIT	XXXX2080
000157	000000713400			000		VFD	18/0,09/713,1/1,1/0,1/0,6/0		
000160	00000001000C			000		VFD	1/0,9/0,8/0,1/N,1/C,2/C,2/1,12/0		
					287	*			XXXX2090
000161	000430	7452	17	010	288	IOU STX5	TX5,7	SAVE IMW INDEX	XXXX2100
000162	000434	7552	17	010	289	STA	TAR,7	& IMW BITS	XXXX2110
000163	000010	1162	07	000	290	CMPQ	8,DL	IS THIS LVL 0-1 INTERRUPT	ANON0130
000164	000004	6032	04	000	291	TRC	4,IC	NO	ANON0140
000165	200000	3152	03	000	292	CANA	.FBT1,DU	YES, IS IT FAULT CHANNEL	ANON0150
000166	000002	6002	04	000	293	TZE	2,IC	NO	ANON0160
000167	002156	7552	00	010	294	STA	FLTIT	YES, SET FLAG	ANON0170
					295	*			
					296	*	TRACE ACCEPT INTERRUPT,TERM,SPEC,MARKER		
					297	*			
					298	*			
000170	400072	7573	00	000	299	STAQ	.WTEMP+2,,P.SS	SAVE AQ	ANON0190
000171	000003	7722	00	000	300	QRL	3		IOS04AAM
000172	000000	6252	06	000	301	EAX5	0,QL	INTERRUPT TYPE T=1, M=2, S=3, F=0	IOS04AAM
000173	004200	6342	07	000	302	LDI	=04200,DL		14FW1670
000174	777777	4112	03	000	303	LDE	-1,DU	GET CHANNEL #	
000175	000000	5732	00	000	304	FNO			
000176	400077	7553	00	000	305	STA	.WTEMP+7,,P.SS	SAVE RESIDUE	XXXX2140
000177	400074	4563	00	000	306	STE	.WTEMP+4,,P.SS		ANON0220
000200	400073	2353	00	000	307	LDA	.WTEMP+3,,P.SS	CELL #	ANON0230
000201	400074	3363	00	000	308	LCQ	.WTEMP+4,,P.SS		ANON0240
000202	000002	7362	00	000	309	QLS	2		
000203	400076	7553	00	000	310	STA	.WTEMP+6,,P.SS	SAVE IT	XXXX2160
		000204			311	.TROPN	NORMI,NONE		XXXX2170
000204	700046	7173	00	000		XED	.CRTRV+4,,P.CR		
000205	000035	7102	04	242		TRA	NORMI,\$		
000206	700312	2203	17	000	312	LDX0	.CRTEP,7,P.CR	TRACE DATA AREA	XXXX2180
000207	000006	7372	00	000	313	LLS	6	AL=CELL#/CHAN#	
000210	400004	2363	00	000	314	LDQ	.WICI,,P.SS	LOAD INTERRUPTED IC	

INTERRUPT HANDLER - ACCEPT INTERRUPT

000211	000022	7372	00	000	315	LLS	18				
000212	000007	7352	00	000	316	ALS	7		A=CELL#/CH#/IC		
000213	000000	6362	17	000	317	EAQ	0,7		PROC#		ANONC260
000214	000022	7722	00	000	318	QRL	18		TO QL		ANONC270
000215	400072	2763	00	000	319	ORQ	.WTEMP+2,,P.SS		IMW WORD		ANONC280
000216	000225	2752	15	010	320	ORA	INTYP,5		ADD INTERRUPT TYPE CODE		IOS01225
000217	700000	7573	10	000	321	STAQ	0,0,P.CR		STORE THEM IN TRACE AREA		
000220	400010	2373	00	000	322	LDAQ	.WISR,,P.SS		LOAD INTERRUPTED ISR		
000221	700002	7573	10	000	323	STAQ	2,0,P.CR				
		000222			324	.TRPUT	ASIS				
000222	000003	6202	00	000		EAXD	3				
000223	700052	7173	00	000		XED	.CRTRV+8,,P.CR				
000224	400000000001			000	325	IGATE	OCT	-1			ANON0300
					326	*					
					327	*					
000225	000000	000062		000	328	INTYP	ZERO	0,.YOTER	FAULT		IOS01240
000226	000000	000063		000	329		ZERO	0,.YTINT	TERMINATE		IOS01245
000227	000000	000062		000	330		ZERO	0,.YOTER	MARKER		IOS01250
000230	000000	000060		000	331		ZERO	0,.YSPEC	SPECIAL		IOS01255
					332	*					
					333	*					
					334	*	EP8 -	ENTRY FROM DISPATCHER IDLE WHEN .CROGT+5 >0			25FW0070
					335	*					ANON1450
000231	001764	4746	07	000	336	PINT	LDP	P.SS,.SSR,DL	ESTABLISH CONVENTIONS		ANON1460
000232	006133	4736	07	000	337		LDP	P.KL,SD,KL,DL			ANON1470
000233	006063	4726	07	000	338		LDP	P.RMS,SD,RMS,DL			ANON1480
000234	001761	4746	07	000	339		LDP	P.SS,.CTYP,DL			ANON1490
000235	700040	4133	00	000	340		RSCR	32,,P.CR	GET CLOCK		EL8.
000236	400070	7573	00	000	341		STAQ	.WTEMP,,P.SS			XXXX2210
000237	777777	2352	03	000	342		LDA	-1,DU			XXXX2220
000240	000000	0116	00	000	343		CCAC		CLEAR CACHE		IOS04AAM
000241	000345	7102	00	010	344		TRA	SLPRO	PROCESS INTERRUPT		EL8.
					345						ANON1500
		000242			346	NORMI	NULL				
000242	000332	7102	00	010	347		TRA	NORMA	* * * TEMP 'TILL THIS CODE FIXED * *		25FW0430
000243	000001	1052	03	000	348		CMPX5	1,DU	TEST TERMINATE		XXXX2250
000244	000332	6012	00	010	349		TNZ	NORMA	NO		XXXX2260
000245	400076	2373	00	000	350		LDAQ	.WTEMP+6,,P.SS	YES		XXXX2270
000246	000001	7362	00	000	351		QLS	1	TEST MULTI CHANNELS		XXXX2280
000247	000332	6012	00	010	352		TNZ	NORMA			XXXX2290
000250	000002	7352	00	000	353		ALS	2			XXXX2300
000251	003774	3752	07	000	354		ANA	.FCHNX,DL	TCX		XXXX2310
000252	701400	2343	05	000	355		SZN	.CRCT1,AL,P.CR	IS DEVICE DISK		XXXX2320
000253	000332	6052	00	010	356		TPL	NORMA	NO		XXXX2330
000254	701200	2243	05	000	357		LDX4	.CRIO1,AL,P.CR	YES, GET ACTIVE I/O ENTRY		25FW0450
000255	000332	6002	00	010	358		TZE	NORMA	NONE		XXXX2350
		000256			359		.SHUTC	NORMA,.CRQGT,,P.CR	TEST IOQ GATE		XXXX2360
000262	701002	2253	05	000	360		LDX5	.CRMB3,AL,P.CR	OKAY, FIND MBX		XXXX2370
000263	200000	2363	15	000	361		LDQ	0,5,P.RMS	GET STATUS		XXXX2390
000264	000330	6052	00	010	362		TPL	NORO	WOOPS		XXXX2400

INTERRUPT HANDLER - ACCEPT INTERRUPT

000265	000327	3162	00	010	363	CANQ	RDYRDY	IS IT NORMAL	XXXX2410
000266	000330	6012	00	010	364	TNZ	NORO	NO	XXXX2420
000267	000000	6212	05	000	365	EAX1	0,AL	YES, SET TCX	XXXX2430
000270	701203	7223	05	000	366	LXL2	.CRI04,AL,P.CR		XXXX2440
000271	003774	3622	03	000	367	ANX2	.FCHNX,DU	LCX	XXXX2450
000272	001706	6756	00	010	368	LDD	PB.CR,BYPCR	SHRINK CR ... NO CACHE	XXXX2460
000273	006013	4716	07	000	369	LDP	P.IOQ,SD.IOQ,DL		XXXX2470
000274	200001	2203	15	000	370	LDX0	1,5,P.RMS	SW 2	XXXX2480
000275	701001	1203	11	000	371	SBLX0	.CRMB2,1,P.CR		XXXX2490
000276	701001	1203	11	000	372	SBLX0	.CRMB2,1,P.CR		XXXX2500
000277	200001	7403	15	000	373	STX0	1,5,P.RMS	RELATIVIZED	XXXX2510
000300	100010	7563	14	000	374	STQ	.WEEP1,4,P.IOQ	SW 1	XXXX2520
000301	200001	0343	15	000	375	LDAC	1,5,P.RMS		XXXX2530
000302	100012	7553	14	000	376	STA	.WEEP2,4,P.IOQ	SW 2	XXXX2540
000303	200000	4503	15	000	377	STZ	0,5,P.RMS		XXXX2550
000304	000000	6202	00	000	378	EAX0	0		XXXX2560
000305	701200	7403	11	000	379	STX0	.CRI01,1,P.CR	FREE UP CHANNEL	XXXX2570
					380 *				XXXX2580
000306	000427	2142	00	010	381	SZNC	TGATE	PROCEDURE GATE	XXXX2590
000307	777777	6002	04	000	382	TZE	-1,IC	WAIT	XXXX2600
000310	000071	7442	56	010	383	STX4	DSTAT,ID	MAKE SRET ENTRY	XXXX2610
000311	000003	6072	04	000	384	TTF	3,IC		XXXX2620
000312	000073	2352	00	010	385	LDA	DSTAT+2	CYCLE TALLY	XXXX2630
000313	000071	7552	00	010	386	STA	DSTAT		XXXX2640
000314	000427	7502	00	010	387	STC2	TGATE	OPEN GATE	XXXX2650
					388 *				XXXX2660
000315	701401	2203	12	000	389	LDX0	.CRCT2,2,P.CR		XXXX2670
000316	701402	1003	12	000	390	CMPX0	.CRCT3,2,P.CR	IS ANYTHING QUEUED	XXXX2680
000317	000324	6002	00	010	391	TZE	NORST	NO	XXXX2690
000320	007700	2352	07	000	392	LDA	=07700,DL	YES	XXXX2700
000321	100000	2553	14	000	393	ORSA	.WEST,4,P.IOQ	SET DUMMY DEVICE NO	XXXX2710
000322	000335	6232	00	010	394	EAX3	NORME	SET STIO RETURN	XXXX2720
000323	007347	7102	00	010	395	TRA	STIO	START I/O ON CHANNEL	XXXX2730
					396 *				XXXX2740
		000324			397	NORST	.OPEN	.CRQGT,,P.CR	XXXX2750
000326	000335	7102	00	010	398	TRA	NORME		XXXX2760
					399 *				XXXX2770
000327	377777770000		000		400	RDYRDY	OCT	377777770000	XXXX2780
					401 *				XXXX2790
		000330			402	NORO	.OPEN	.CRQGT,,P.CR	XXXX2800
000332	000430	2252	17	010	403	NORMA	LDX5	TX5,7	XXXX2810
000333	000434	2352	17	010	404		LDA	TAR,7	XXXX2820
000334	002240	2552	15	010	405		ORSA	IMW,5	XXXX2830
		000335			406	NORME	NULL	LOG INTERRUPT	XXXX2840
000335	700336	7203	17	000	407		LXL0	.CRTLY,7,P.CR	ANON0320
000336	000345	6002	00	010	408		TZE	SLPRO	NO, PROCESS INTERRUPT
000337	700037	7503	00	000	409		STC2	.CROGT+5,,P.CR	YES, SET FLAG
		000340			410	NOFLT	OCLIMB	RETURN TO INTERRUPTED PROCESS	ANON0350
000340	000000713400		000			VFD	18/0,09/713,1/1,1/0,1/0,6/0		
000341	000000010000		000			VFD	1/0,9/0,8/0,1/N,1/C,2/C,2/1,12/0		

INTERRUPT HANDLER - ACCEPT INTERRUPT

000410	300044	0343	17	000	461	GTQUE	LDAC	.KLPRG,7,P.KL		EL8.
000411	000644	7552	17	010	462		STA	MYPRG,7	SAVE INTERRUPTED KPX	EL8.
000412	000427	2142	00	010	463		SZNC	TGATE	PROCEDURE GATE	EL8.
000413	777777	6002	04	000	464		TZE	-1,IC	WAIT	XXXX2930
000414	000072	2242	51	010	465		LDX4	DSTAT+1,I	IS ANY STATUS STACKED	XXXX2940
000415	000003	6012	04	000	466		TNZ	3,IC	YES	XXXX2950
000416	000427	7502	00	010	467		STC2	TGATE	NO, OPEN GATE	XXXX2960
000417	000671	7102	00	010	468		TRA	GTCHN2	& PROCESS IMW'S	XXXX2970
					469	*				XXXX2980
000420	000072	4502	56	010	470		STZ	DSTAT+1,ID	CLEAR WORD & BUMP TALLY	XXXX2990
000421	000003	6072	04	000	471		TTF	3,IC		XXXX3000
000422	000073	2352	00	010	472		LDA	DSTAT+2		XXXX3010
000423	000072	7552	00	010	473		STA	DSTAT+1	CYCLE TALLY	XXXX3020
000424	000427	7502	00	010	474		STC2	TGATE	OPEN GATE	XXXX3030
000425	000410	6202	00	010	475		EAX0	GTQUE	SET RETURN	XXXX3040
000426	003036	7102	00	010	476		TRA	STRET	RETURN STATUS	XXXX3050
					477		INHIB	RESTORE		XXXX3060
					478					XXXX3070
000427	777777777777			000	479		TGATE	DEC	-1	XXXX3080
		000430			480		TX5	BSS	4	XXXX3090
		000434			481		TAR	BSS	4	XXXX3100

INTERRUPT HANDLER - PROCESS FAULT CHANNEL

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483 *
484 * * * * *
485 *      A --IMW WORD
486 *      Q --INTERRUPT LEVEL
487 *      X1  D/C
488 *      X2  D/C
489 *      X3  IOM #
490 *      X4
491 *      X5  D/C
492 *      X6  KPX OF INTERRUPTED PROCESS
493 *      X7  PROCESSOR #
494 *
495 *      P2  P.RMS
496 *      P3  P.KL
497 *      P5  PB.CR
498 *      P6  P.SSA OF POP
499 *      P7  P.CR
500 * * * * *
501      INHIB  ON                                IOS04A5R
000440 000000 0116 00 000 502 FAULT NULL                                IOS04A5R
000441 001706 6756 00 010 503      CCAC                                IOS04A5R
000442 775537 6362 11 000 504      LDD      PB.CR,BYPCR      SET CACHE BYPASS DESC
000443 000711 7162 00 010 505      EAQ      .,IOS-IMW-1,1    IMW OFFSET                                IOS04AAM
000444 000000 6232 01 000 506      XEC      INTCV                                IOS04AAM
000445 300133 2223 13 000 507      EAX3     0,AU      IOM #                                IOS04AAM
000446 000614 7422 00 010 508      LDX2     .,KLICN,3,P.KL  GET IOM OFFSET ; X3=IOM#
000447 501007 2243 12 000 509      STX2     IOMOFF
000450 000634 1042 13 010 510      LDX4     .,CRMB4+4,2,PB.CR GET FAULT CHAN. DCW POINTER
000451 000456 6012 00 010 511      CMPX4    MYMB4,3      COMPARE OUR DCW DATA ADDR WITH HARD 0
000452 200000 2343 14 000 512      TNZ      CHKQU
000453 000631 6046 00 010 513      SZN      0,4,P.RMS    EQUAL QUEUE IS EMPTY OR FULL
000454 000070 7162 00 010 514      TMOZ     FLTEX        QUEUE IS EMPTY- IGNORE IT
000455 000455 515      XEC      DBUG                                IOS04AAM
000456 000456 6222 13 010 516      ZOP      16,DU        QUEUE IS OVERFLOW
000457 000465 7422 00 010 517 *
000458 000634 6222 13 010 518 CHKQU NULL      THERE IS QUEUE
000459 000465 7422 00 010 519      EAX2     MYMB4,3
000460 000000 2242 12 000 520      STX2     INCRE
000461 200000 2353 14 000 521      LDX4     0,2      GET STATUS WORD ADDR IN X4
000462 000631 6046 00 010 522      LDA      0,4,P.RMS    GET STTATUS
000463 400000 2362 03 000 523      TMOZ     FLTEX        QUE EMPTY OR ALREADY PROCESSED
000464 200000 2563 14 000 524      LDQ      =0400C00,DU
000465 000000 0112 56 000 525      ORSQ     0,4,P.RMS
000466 000471 6072 00 010 526 *
000467 000640 2362 13 010 527 *
000468 000634 7562 13 010 528 INCRE NOP      **,ID      INCREMENT OUR ADDR.AND DECREMENT TALL
000469 000640 2362 13 010 529      TTF      GETCH        NO TALLY RUNOUT ON THIS DCW
000470 000634 7562 13 010 530      LDQ      MYREF,3      REFRESH DCW
000471 000634 7562 13 010 531      STQ      MYMB4,3
000472 000634 7562 13 010 532 *

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INTERRUPT HANDLER - PROCESS FAULT CHANNEL

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000471 000000 6222 01 000 533 GETCH EAX2 0,AU
000472 000077 3622 03 000 534 ANX2 =000077,DU ISOLATE CH#
000473 000002 1022 03 000 535 CMPX2 =000002,DU IS THIS CONNECT CHAN ?
000474 000503 6012 00 010 536 TNZ NOCON NO
537 * YES
538 * WE WILL PICK UP WD3 OF CONNECT CHAN.
539 * BIT3-8 CONTAINS THE CHAN#. CONNECT WAS ATTEMPTING TO START.
540 * THEN WE CONTINUE ON AS NORMAL
541 *
000475 300133 2223 13 000 542 LDX2 .KLICN,3,P.KL GET IOM OFFSET
000476 701010 4503 12 000 543 STZ .CRMB1+8,2,P.CR CLEAR IT OUT
000477 777777 3752 07 000 544 ANA =077777,DL LEAVE ONLY THE TYPE
000500 000011 7352 00 000 545 ALS 9 POSITION FOR THE ADDR
000501 701013 0353 12 000 546 ADLA .CRMB1+11,2,P.CR ADD IN THE CHAN #
000502 000011 7312 00 000 547 ARS 9 REPOSITION
548 *
549 *
000503 002154 7552 00 010 550 NOCON NULL
551 STA BUSYF SAVE STATUS WORD
552 *
553 *
554 *TRACE IOM FAULT TYPE
555 *
000504 700046 7173 00 000 556 .TROPN TESTCH,NONE
000505 000010 7102 04 515 XED .CRTRV+4,,P.CR
000506 700312 2203 17 000 557 LDX0 .CRTEP,7,P.CR GET TRACE DATA AREA
000507 000044 7732 00 000 558 LRL 36
000510 000000 6352 13 000 559 EAA 0,3
000511 000051 2752 07 000 560 ORA .YIOF,DL
000512 700000 7573 10 000 561 STAQ 0,0,P.CR
000513 000003 6202 00 000 562 .TRPUT ASIS
000514 700052 7173 00 000 EAX0 3
XED .CRTRV+8,,P.CR
000515 002154 2352 00 010 563 TESTCH NULL
000516 000777 3152 03 000 564 LDA BUSYF
000517 000573 6002 00 010 565 CANA =0777,DU
000520 001700 3152 07 000 566 TZE LIMBO NO CHAN# GIVEN
000521 000545 6002 00 010 567 CANA =0170C,DL IS THIS SYS FALT CODE ?
000522 001700 3752 07 000 568 TZE IOFLT NO,I/O FLT
000523 000006 7712 00 000 569 ANA =0170C,DL YES, SYS FLT ISOLATE IT
000524 000650 7552 00 010 570 ARL 6
000525 000526 7102 05 010 571 STA TEMST SAVE SYS FLT CODE IN AL
572 TRA *+1,AL TRANSFER TO FALT TYPE
573 *
574 * SCU FAULT CODE TABLE
575 *
000526 000573 7102 00 010 576 TRA LIMBO 0001 NOT USED
000527 000610 7102 00 010 577 TRA GEPR 0010 NON EXISTENT ADDR
000530 000610 7102 00 010 578 TRA GEPR 0011 FAUT ON CONDITION

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INTERRUPT HANDLER - PROCESS FAULT CHANNEL

000531	000573	7102	00	010	579	TRA	LIMBO	0100	NOT USED	
000532	000607	7102	00	010	580	TRA	PARTY	0101	DATA PARITY , STORE TO SC	
000533	000607	7102	00	010	581	TRA	PARTY	0110	DATA PARITY , IN STORE	
000534	000607	7102	00	010	582	TRA	PARTY	0111	DATA PARITY , STORE TO SC/IN STO	
000535	000610	7102	00	010	583	TRA	GEPR	1000	NOT CONTROL PORT	
000536	000610	7102	00	010	584	TRA	GEPR	1001	PORT NOT ENABLE	
000537	000610	7102	00	010	585	TRA	GEPR	1010	ILLEGAL INSTRUCTION	
000540	000610	7102	00	010	586	TRA	GEPR	1011	STORE NOT READY	
000541	000610	7102	00	010	587	TRA	GEPR	1100	ZAC PARITY ACTIVE MODULE TO SC	
000542	000610	7102	00	010	588	TRA	GEPR	1101	DATA PARITY ACTIVE MODULE TO SC	
000543	000607	7102	00	010	589	TRA	PARTY	1110	ZAC PARITY, SC TO STORE UNIT	
000544	000607	7102	00	010	590	TRA	PARTY	1111	DATA PARITY, SC TO STORE UNIT	
					591	*				
					592	IOFLT	NULL			
000545	000060	3152	07	000	593	CANA	=060,DL			
000546	000604	6012	00	010	594	TNZ	LIMBO3			
000547	000017	3752	07	000	595	ANA	=017,DL			
000550	000040	2752	07	000	596	ORA	.FBT30,DL		ISOLATE I/O FAULT CODE	
000551	000650	7552	00	010	597	STA	TEMST		SET I/O FAULT BIT	IOS04A5R
000552	000553	7102	05	010	598	TRA	*+1,AL			IOS04A5R
					599	*			TRA TO FAULT TYPE	
					600	*				
					601	*				
					602	*	I/O FALT CODE TABLE			
000553	000610	7102	00	010	602	TRA	GEPR	0000	FALT WITH NO CODE	
000554	000601	7102	00	010	603	TRA	LIMBO2	0001	ILLEGAL CHANNEL #	IOS04AAM
000555	000610	7102	00	010	604	TRA	GEPR	0010	ILLEGAL SERVICE REQUEST	IOS06695
000556	000610	7102	00	010	605	TRA	GEPR	0011	PARITY ,SCRATCH PAD READ	
000557	000610	7102	00	010	606	TRA	GEPR	0100	256K OVF	
000560	000576	7102	00	010	607	TRA	LIMBO1	0101	LPW TALLY RUNOUT, CONNECT CH	
000561	000610	7102	00	010	608	TRA	GEPR	0110	NOT PCW ON CONNECT CHAN	
000562	000576	7102	00	010	609	TRA	LIMBO1	0111	CP FIELD ALL ONES	
000563	000610	7102	00	010	610	TRA	GEPR	1000	CHAR. POS/SIZ DESCRIANCY	
000564	000576	7102	00	010	611	TRA	LIMBO1	1001	NO SCU RESPONCE	
000565	000576	7102	00	010	612	TRA	LIMBO1	1010	PARITY BETWEEN MODULES	
000566	000576	7102	00	010	613	TRA	LIMBO1	1011	ILLEGAL TALLY CONTROL	
000567	000601	7102	00	010	614	TRA	LIMBO2	1100	PTP FAULT	
000570	000610	7102	00	010	615	TRA	GEPR	1101	PTW FLAG FAULT	V
000571	000576	7102	00	010	616	TRA	LIMBO1	1110	MODE POSITION SW INCORRECT	
000572	000576	7102	00	010	617	TRA	LIMBO1	1111	NO PORT SELECT	
					618	*				
000573	000070	7162	00	010	619	LIMBO	XEC	DEBUG		16FW0130
					620		ZOP	2		16FW0140
000575	000610	7102	00	010	621	TRA	GEPR			16FW0150
000576	000070	7162	00	010	622	LIMBO1	XEC	DEBUG		16FW0160
					623		ZOP	3		16FW0170
000600	000610	7102	00	010	624	TRA	GEPR			16FW0180
000601	000070	7162	00	010	625	LIMBO2	XEC	DEBUG		16FW0190
					626		ZOP	4		16FW0200
000603	000456	7102	00	010	627	TRA	CHKQU		TRY NEXT QUE	IOS04AAM
000604	000070	7162	00	010	628	LIMBO3	XEC	DEBUG		16FW0220

INTERRUPT HANDLER - PROCESS FAULT CHANNEL

000606	000610	7102 00 010	000605	629	ZOP	5			16FWC230
				630	TRA	GEPR			16FWC240
				631	*				
				632	*				
000607	002161	0542 00 010	000607	633	PARTY	NULL	PARITY ERR --TRY TO SCAN MEMORY	PARITY	
				634	AOS		PARCN		
				635	*	TRA	GEPR		
				636	*				
000610	002154	2352 00 010	000610	637	GEPR	NULL			
000611	000777	3752 03 000		638	LDA	BUSYF	LOAD STATUS WORD		
000612	000625	7512 70 010		639	ANA	=0777,DU	ISOLATE CHAN#		
000613	000002	7352 00 000		640	STCA	CHNO,70	STORE CH# IN SHFT INST.		
000614	000000	0352 03 000		641	ALS	2	MPY BY 4		
000615	501002	2223 01 000		642	IOMOFF	ADLA	**DU		
000616	000456	6002 00 010		643	LDX2	.CRMB3,AU,PB.CR	PICK UP STATUS WORD		
000617	000650	2352 00 010		644	TZE	CHKQU	NULL PTR, IGNORE IT		IOS04A5R
000620	000030	7352 00 000		645	LDA	TEMST	GET THE FALT CODE		
000621	570000	2752 03 000		646	ALS	24	SHIFT INTO SUBSTATUS FIELD		
000622	002154	2362 00 010		647	ORA	=0570000,DU	SET SOFTWARE MAJOR STATUS		EL8.
000623	200000	7573 12 000		648	LDQ	BUSYF	GET THE STATUS WORD		
000624	400000	2352 03 000		649	STAQ	0,2,P,RMS	STORE STATUS WORD		
000625	000000	7712 00 000		650	LDA	=0,0,DU	TURN ON BIT 0 IN AR		
000626	002214	2222 13 010		651	CHNO	ARL	**		
000627	002240	2552 12 010		652	LDX2	MAP+12,3	GET TERM WORD		IOS07345
000630	000456	7102 00 010		653	ORSA	IMW,2	SET TERM INT BIT		IOS07350
				654	TRA	CHKQU	GO CHECK NEXT QUEUE		
				655	INHIB	OFF			IOS04A5R
				656	*				
000631	006133	4734 07 000	000631	657	FLTEX	NULL			
000632	002156	4500 00 010		658	LDP	P,KL,SD,KL,DL			
000633	000666	7100 00 010		659	STZ	FLTIT	CLEAR FAULT FLAG		
				660	TRA	GTCHN			ANON0510

INTERRUPT HANDLER - PROCESS FAULT CHANNEL

662 *
 663 *
 664 * SYSTEM FAULT CONSTANT SECTION
 665 *
 666 *
 667 *
 668 *
 669 *

000634	000000000000	000	670 MYMB4	OCT	0,0,0,0
000635	000000000000	000			
000636	000000000000	000			
000637	000000000000	000			
000640	000000000000	000	671 MYREF	OCT	0,0,0,0
000641	000000000000	000			
000642	000000000000	000			
000643	000000000000	000			
000644	000000000000	000	672 MYPRG	OCT	0,0,0,0
000645	000000000000	000			
000646	000000000000	000			
000647	000000000000	000			
000650	000000000000	000	673 TEMST	OCT	0

EL8.

USED TO FORMAT FAULT CODE

INTERRUPT HANDLER - SELECT AN INTERRUPT

675 *
 676 * INTERRUPT HAS BEEN TAKEN AND HARDWARE IMW WORD (SD.IMW)
 677 * TRANSFERED TO THE SOFTWARE IMW WARD. INTERRUPTED PROCESS
 678 * HAS BEEN TAKEN OUT OF EXECUTION, ACCOUNTING FUNCTIONS PERFORMED.
 679 * INDEX 7 HAS THE PROCESSOR # = 0. IF INTPG IS NON ZERO A USER
 680 * PROCESS WAS INTERRUPTED. IF ZERO, THE DISPATCHER WAS INTERRU
 681 *
 682 * ODR0
 683 * ODR1 (P. IOQ)
 684 * ODR2 P. RMS
 685 * ODR3 P. KL
 686 * ODR4 P. DDD
 687 * ODR5
 688 * ODR6 P. SSA
 689 * ODR7 P. CR
 690 *

000651	000000011007	000	691	TIMEX	EBSS	2	INTERRUPT TIME	ANON0560
	000652		692	BPVEC	VEC	.ISR,C,IMW+20-.IOS,(R,W,B)		IOS04AAM
000654	002263740640	000	693	GTCHN1	CMPA	.FBT6,DU	IS IT CHANNEL 6	IOS01350
000655	000000001762	000	694		TZE	INTOK	YES, PROCESS IT	IOS01355
000656	004000 1150 03	000	695		CANA	.FBT1,DU	NO, IS IT FAULT CHAN	14FW1690
000657	000706 6000 00	010	696		TNZ	FAULT	YES, PROCESS IT	ANON0540
000660	200000 3150 03	000	697		LDXO	=01777,DU		IOS01360
000661	000440 6010 00	010	698		ANSXO	-1,1		IOS01365
000662	001777 2200 03	000	699		LDA	-1,1	GET IMW WORD	IOS01370
000663	777777 3400 11	000	700		TRA	CHAN	(XRS IS ALREADY SET)	IOS01375
000664	777777 2350 11	000	701	*				
000665	001612 7100 00	010	702	GTCHN	NULL	GET NEXT CHANNEL INTERRUPT TO PROCESS		
	000666		703		LDP	P.SSA,SD.SSA,DL	RELOAD SSA DESC.	
000666	006145 4764 07	000	704		LDP	P.KL,SD.KL,DL		
000667	006133 4734 07	000	705		LDP	P.RMS,SD.RMS,DL		
000670	006063 4724 07	000	706	GTCHN2	NULL			
	000671		707		LDP	P.DDD,SD.DDD,DL		
000671	006131 4744 07	000	708		LDP	P.IOQ,SD.IOQ,DL		
000672	006013 4714 07	000	709		LDP	P.IOQ,,CTYP,DL		
000673	001761 4714 07	000	710		LDD	PO,BPVEC	CACHE BYPASS VECTOR	ANONC590
000674	000654 6704 00	010	711		EAX1	0		ANONC600
000675	000000 6210 00	000	712	GTCHN4	RPT	4,1,TNZ	SCAN FOR ACTIVE IMW ENTRY	ANON0610
000676	010240 5202 01	000	713		LDA	IMW-.IOS,1,PO	PICK UP IMW	ANONC620
000677	002240 2351 11	000	714		TZE	TMOR	NONE FOUND, CHEK LCST INTERRUPTS	IOS01335
000700	001715 6000 00	010	715		TSX5	CHAN	DETERMINE CHAN #	
000701	001612 7050 00	010	716		STQ	CHANO	SAVE CHAN#	
000702	002153 7560 00	010	717		ERSA	-1,1,PO	CLEAR BIT FOR THIS CHANNEL	IOS04AAM
000703	077777 6551 11	000	718		INHIB	OFF		IOS04AAM
	000704		719		CMPA	=02000,DU	ARE THESE OVERHEAD CHN INTERRUPTS	
000704	002000 1150 03	000	720		TRC	GTCHN1	YES	IOS01395
000705	000656 6030 00	010	721	*				
	000706		722	INTOK	NULL			IOS03740

INTERRUPT HANDLER - SELECT AN INTERRUPT

000706	000002	7360	00	000	723	QLS	2	4*CHANO	IOS04AAM
000707	000000	6220	02	000	724	EAX2	0,QU		IOS04AAM
000710	775537	6360	11	000	725	EAQ	..IOS-IMW-1,1	IMW OFFSET	IOS04AAM
					726 *	DIV	NRIOC,DU	IS NEXT INSTRUCTION IF MULTI-IOMS.	IOS04AAM
000711	000022	7730	00	000	727	INTCV	LRL	18	INTYP => QL, IOM # => AU.
000712	000000	6200	06	000	728	EAX0	0,QL	INTYP	IOS04AAM
000713	000000	6230	01	000	729	EAX3	0,AU	IOM #	IOS04AAM
000714	000000	6210	12	000	730	EAX1	0,2	4*CHANO	IOS04AAM
000715	300133	0211	13	000	731	ADLX1	.KLICN,3,P.KL	TRUE CHANNEL INDEX	IOS04AAM
000716	000030	1020	03	000	732	CMPX2	6*4,DU	TEST CHANNEL 6	IOS04AAM
000717	001137	6010	00	010	733	TNZ	NOPSIA	NO	

INTERRUPT HANDLER - PROCESS PSIA CHANNEL

```

735 * * * * *
736 *
737 *      X0      INTERRUPT LEVEL
738 *      X1      LCX
739 *      X2
740 *      X3      IOM#
741 *      X4
742 *      X5
743 *      X6      KPX OF PCP
744 *      X7      PROCESSOR #
745 *
746 *      P0
747 *      P1      P.IOQ
748 *      P2      P.RMS
749 *      P3      P.KL
750 *      P4
751 *      P5      PB.CR
752 *      P6      P.SSA OF POP
753 *      P7      P.CR
754 *
755 *
756 *
757 *      PSI --- PERIPHERAL SUBSYSTEM INTER FACE RELATED I/O CODE
758 *
759 *

```

IOS04AAM

```

000720 001706 6754 00 010
000721 000003 1000 03 000
000722 000666 6C10 00 010
000723 501001 7221 11 000
000724 000666 6000 00 010

000725 400000 2240 03 000
000726 200000 3041 12 000
000727 000742 6000 00 010
000730 002160 0540 00 010

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000720 PSIA NULL PROCESS PSI CHANNEL SPECIAL INTERRUPTS
761 LDD PB.CR,BYPCR SET CACHE BYPASS CR DESC
762 CMPX0 3,DU TEST SPECIAL INTERRUPT
763 TNZ GTCHN NO, GET NEXT INTERRUPT
764 LXL2 .CRMB2,1,PB.CR GET LAST STATUS WORD POINTER
765 TZE GTCHN NONE-- IGNORE IT
766 *
767 LDX4 =0400000,DU
768 CANX4 0,2,P.RMS HAS THE LAST STATUS WORD BEEN PROCESS
769 TZE PSIA1
770 AOS SPOVF NO, ACCUMULATE QUEUE OVERLAY COUNT
771 *
772 *
773 *
774 * CALL MISC EP7
775 *
776 INHIB ON
777 LDQ 0,2,P.RMS SPECIAL STATUS WORD
778 SREG REGW
779 QRL 25 4*CHN# IN QL
780 STQ MSG+2
781 STA MSG+1 IOM# IN BIT 16-17
782 LDA .MPOP6*512+3,DU GET POP6 ID FOR EP3
783 STA MSG
784 TSX5 MISC7 MAKE QUE ENTRY

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IOS03815

EL8.

INTERRUPT HANDLER - PROCESS PSIA CHANNEL

000741	002170	0732	00	010	785	LREG	REGW			EL8.
					786	INHIB	OFF			EL8.
					787	*				
					788	PSIA1	NULL			
000742	501001	2221	11	000	789	LDX2	.CRMB2,1,PB.CR	FETCH STATUS WORD POINTER		
000743	001117	6000	00	010	790	TZE	TSOVR	NULL		IOS04A5R
000744	200000	3041	12	000	791	TRAGN	CANX4	0,2,P,RMS	HAS THIS STATUS WORD BEEN PROCESSED ?	
000745	001117	6000	00	010	792	TZE	TSOVR			
000746	200000	2361	12	000	793	LDQ	0,2,P,RMS	GET SPECIAL STATUS WORD		
000747	200000	6441	12	000	794	ERSX4	0,2,P,RMS	TURN OFF STATUS WORD BIT0		
000750	701001	4421	11	000	795	SXL2	.CRMB2,1,P.CR	UPDATE LAST QUEUE POINTER		
000751	000001	6220	12	000	796	EAX2	1,2	MOVE INDEX TO NEXT QUEUE LOCATION		
000752	701001	7421	11	000	797	STX2	.CRMB2,1,P.CR	STORE NEXT STATUS WORD POINTER		
000753	501003	1021	11	000	798	CMPX2	.CRMB4,1,PB.CR	HAS ENTIRE QUEUE BEEN PROCESSED ?		
000754	000761	6000	00	010	799	TZE	PSICH	YES		
000755	002234	2250	13	010	800	LDX5	MAP+28,3			IOS04AAM
000756	002240	0340	15	010	801	LDAC	IMW,5	GET IMW WORD		IOS04AAM
000757	004000	2750	03	000	802	ORA	.FBT6,DU	SET CHANL 6 BIT		IOS04AAM
000760	002240	7550	15	010	803	STA	IMW,5	TO FORCE MORE PROCESSING		IOS04AAM
					804	*				
					805	PSICH	NULL	SET INDEXES FOR	THIS PSI CHAN. SPECIAL INTERRUPT	
000761	000000	6350	02	000	806	EAA	0,QU	UPPER HALF OF STATUS WORD		
000762	077000	3750	03	000	807	ANA	=0770C0,DU	INTERRUPTING CHANNEL		
000763	000007	7710	00	000	808	ARL	7	4*CHAN, NUMBER IN BITS 10-17		
000764	000000	6210	01	000	809	EAX1	0,AU			
000765	300133	0211	13	000	810	ADLX1	.KLICN,3,P.KL	IOM#(384)+4*CHNO---TCX		
000766	701200	7241	11	000	811	LXL4	.CRI01,1,P.CR			
000767	100000	3040	03	000	812	CANX4	=0100C00,DU	IS THIS A PSI CHAN?		
000770	000666	6000	00	010	813	TZE	GTCHN	NO, IGNORE IT		
000771	000002	7710	00	000	814	ARL	2	CHAN# IN BIT 12-17		
000772	002153	7550	00	010	815	STA	CHANO			
					816	*				
					817	*	A = CHAN#			
					818	*	Q = SPI STATUS WCRD			
					819	*				
					820	*	X0 = INTERRUPT LEVEL			
					821	*	X1 = TCX			
					822	*	X3 = IOM#			
					823	*	X7 = PROCESSOR#			
					824	*				
000773	000000	6260	06	000	825	EAX6	0,QL			
000774	001000	1060	03	000	826	CMPX6	=0100C,DU	IS THIS A SUSPEND SPI		
000775	001000	6000	00	010	827	TZE	SPLTR	YES		
000776	002000	1060	03	000	828	CMPX6	=0200C,DU	IS THIS A RELEASE SPI		
000777	001145	6010	00	010	829	TNZ	FXLVL	NO, FIX INTERRUPT LEVELS		
					830	*				
					831	*	TRACE	MPC CONTROLLER SPECIAL INTERRUPTS		
	001000				832	SPLTR	NULL			
					833		INHIB	ON		
	001000				834		.TROPN	SPLT1,GREG		

INTERRUPT HANDLER - PROCESS PSIA CHANNEL

001000	700044	7173	00	000		XED	.CRTRV+2,,P.CR	
001001	000012	7102	04	1013		TRA	SPLT1,\$	
001002	700312	2203	17	000	835	LDXO	.CRTEP,7,P.CR	
001003	000000	6352	13	000	836	EAA	0,3	IOM# IN BIT16-17
001004	000006	7352	00	000	837	ALS	6	ITS IN BITS 10- 11
001005	002153	2752	00	010	838	ORA	CHANO	
001006	000007	7352	00	000	839	ALS	7	
001007	000064	2752	07	000	840	ORA	.YPSI,DL	SET SPI PROCESSING TYPE
001010	700000	7573	10	000	841	STAQ	0,0,P.CR	
		001011			842	.TRPUT	ASIS	
001011	000003	6202	00	000		EAXO	3	
001012	700052	7173	00	000		XED	.CRTRV+8,,P.CR	
					843 *			
					844	INHIB	OFF	
001013	002000	1060	03	000	845	SPLT1	CMPX6	=02000,DU
001014	001027	6000	00	010	846		TZE	RELIT
					847 *			
		001015			848	SPDIT	NULL	SUSPEND COMMAND
					849		INHIB	ON
001015	701200	7223	11	000	850	LXL2	.CRI01,1,P.CR	
001016	000003	3022	03	000	851	CANX2	3,DU	SUSPEND OR SUSPEND CMD CHAN ?
001017	000666	6012	00	010	852	TNZ	GTCHN	YES, BITS SET AT CMD TIME
					853 *			
		001020			854	.SHUT	.CRQGT,,P.CR	
001023	001073	7052	00	010	855	TSX5	SPDPSI	GO TO MARK PSI CHANNELS
					856 *			
		001024			857	.OPEN	.CRQGT,,P.CR	
					858	INHIB	OFF	
001026	000666	7100	00	010	859	TRA	GTCHN	GET NEXT INTERRUPT
					860 *			
		001027			861	RELIT	NULL	RELEASE COMMAND
001027	701200	7221	11	000	862	LXL2	.CRI01,1,P.CR	
001030	000003	3020	03	000	863	CANX2	3,DU	SUSPEND OR SUSPEND CMD CHAN ?
001031	000666	6000	00	010	864	TZE	GTCHN	NO BIT
001032	300000	3620	03	000	865	ANX2	=0300000,DU	CHAN, PSIA INDICATOR BITS
001033	100000	1020	03	000	866	CMPX2	=0100000,DU	IS THIS PSIA CHAN ZERO ?
001034	000666	6010	00	010	867	TNZ	GTCHN	NO, IGNORE IT
					868 *			
		001035			869	RELS2	NULL	
001035	000004	3350	07	000	870	LCA	4,DL	MASK =777777777774
001036	701203	7221	11	000	871	LXL2	.CRI04,1,P.CR	
001037	003774	3620	03	000	872	ANX2	.FCHNX,DU	LCX
					873	INHIB	ON	
					874 *			
		001040			875	.SHUT	.CRQGT,,P.CR	
001043	701203	2363	11	000	876	LDQ	.CRI04,1,P.CR	
001044	000003	3762	07	000	877	ANQ	3,DL	FORMER CHANNEL T&D AND STOP BITS
001045	701200	3553	11	000	878	ANSA	.CRI01,1,P.CR	CLEAR SUSP & SUSPEND CMD BITS
001046	000002	3162	07	000	879	CANQ	.FBT34,DL	IS T&D IN CTL
001047	000002	6012	04	000	880	TNZ	2,IC	YES, STET

INTERRUPT HANDLER - PROCESS PSIA CHANNEL

001050	701203	3553	11	000	881	ANSA	.CRI04,1,P.CR	CLEAR FORMER T&D AND STOP BITS	
001051	701400	3553	12	000	882	ANSA	.CRCT1,2,P.CR	CLEAR CURRENT T&D AND STOP BITS	
001052	701400	2563	12	000	883	ORSQ	.CRCT1,2,P.CR	RESTORE FORMER T&D AND STOP BITS	
001053	001062	7412	00	010	884	STX1	RLTCX	SAVE TCX	
001054	701400	7233	12	000	885	LXL3	.CRCT1,2,P.CR		
001055	040000	3032	03	000	886	CANX3	.FPRCH,DU	IS THIS A PRIMARY CHAN. ?	
001056	001061	6002	00	010	887	TZE	*+3	YES	
001057	003774	3632	03	000	888	ANX3	.FCHNX,DU	ISOLATE LPCX	
001060	000000	6222	13	000	889	EAX2	0,3		
001061	007347	7032	00	010	890	TSX3	STIO	GO START I/O	
					891 *				
					892	INHIB	OFF		
					893 *				
		001062			894	RLTCX	NULL		
001062	000000	2210	03	000	895	LDX1	** ,DU	RESTORE X1 AFTER STIO	
001063	000004	6210	11	000	896	EAX1	4,1	BUMP X1	
001064	701200	7201	11	000	897	LXLO	.CRI01,1,P.CR		
001065	200000	3000	03	000	898	CANX0	=0200C00,DU	IS THIS ANOTHER CHANNEL ON THIS PSIA	
001066	001035	6010	00	010	899	TNZ	RELS2	PROCESS THIS VALID PSIA CHANNEL	
001067	000666	7100	00	010	900	TRA	GTCHN	NO,GET NEXT INTERRUPT	
					901 *				
					902	INHIB	ON		
001070	000070	7162	00	010	903	SPDX	XEC	ILLEGAL CMD/INT FOR CHANNEL	16FW0430
		001071			904	ZOP	6		16FW0440
001072	000000	7102	15	000	905	TRA	0,5		16FW0450
					906 *				16FW0460
		001073			907	SPDPSI	NULL	SUSPEND ALL CHANNELS ON THIS PSIA	
					908			THE .CRQGT HAS PREVIOUSLY BEEN CLOSED	
001073	701200	7223	11	000	909	LXL2	.CRI01,1,P.CR		
001074	300000	3622	03	000	910	ANX2	=0300000,DU	CHAN PSIA INDICATOR BITS	
001075	100000	1022	03	000	911	CMPX2	=0100C00,DU	IS THIS PSIA CHANNEL ZERO	
001076	001070	6012	00	010	912	TNZ	SPDX	NO	16FW0410
					913 *				
					914 *			NOW EXAMINE ALL CHANNELS OF THIS PSIA PROCESSING	
					915 *			ALL STOPPED CHANNELS AT .CRCT4 FOR LATER RESTORATION	
					916 *			THEN MARK ALL THESE PSIA CHANNELS SUSPENDED	
					917 *			AT .CRI01 ; STOPPED AND FOR T&D AT .CRCT1 .	
					918 *				
001077	000000	6202	11	000	919	EAX0	0,1	TCX IN X0	
001100	701203	7223	10	000	920	SPD1	LXL2	.CRI04,0,P.CR	
001101	003774	3622	03	000	921	ANX2	.FCHNX,DU	ISOLATE LCX	
001102	701400	2353	12	000	922	LDA	.CRCT1,2,P.CR		
001103	000003	3752	07	000	923	ANA	3,DL	CHANNEL STOP & T&D BITS	
001104	701203	2553	10	000	924	ORSA	.CRI04,0,P.CR	SAVE THESE CONTROL BITS TO RESTORE CH	
001105	000004	3352	07	000	925	LCA	4,DL	MASK=777777777774	
001106	701200	3553	10	000	926	ANSA	.CRI01,0,P.CR	CLEAR BITS #34-35	
001107	701200	0543	10	000	927	AOS	.CRI01,0,P.CR	TURN ON CHANNEL SUSPEND BIT	
001110	000003	2352	07	000	928	LDA	3,DL		
001111	701400	2553	12	000	929	ORSA	.CRCT1,2,P.CR	TURN ON CHANNEL STOP & T&D BITS	
001112	000004	6202	10	000	930	EAX0	4,0	MOVE TCX TO NEXT PSIA CHAN.	

INTERRUPT HANDLER - PROCESS PSIA CHANNEL

001113	701200	7223	10	000	931	LXL2	.CRI01,0,P.CR	
001114	200000	3022	03	000	932	CANX2	=0200000,DU	IS THIS A CONFIGURATION OF THIS PSIA
001115	001100	6012	00	010	933	TNZ	SPD1	YES
001116	000000	7102	15	000	934	TRA	0,5	RETURN PSIA PROCESSED
					935	*		
					936	INHIB	OFF	
					937	*		
		001117			938	TSOVR	NULL	CHECK IF THE PSIA QUEUE POINTER IS PAST THE END
001117	501002	7221	11	000	939	LXL2	.CRMB3,1,PB.CR	GET UPDATE TALLY FROM CHAN. RERESH
001120	501002	0221	11	000	940	ADLX2	.CRMB3,1,PB.CR	ADDR OF END OF QUEUE
001121	501001	1221	11	000	941	SBLX2	.CRMB2,1,PB.CR	QUEUE OVERFLOW --- NEGATED
001122	001127	6040	00	010	942	TMI	BGNQ	POINTER OUTSIDE OF QUEUE
001123	501002	2221	11	000	943	LDX2	.CRMB3,1,PB.CR	LOOK AT BEG. OF QUEUE
001124	200000	3041	12	000	944	CANX4	0,2,P.RMS	
001125	000666	6000	00	010	945	TZE	GTCHN	NOTHING IN QUEUE -- IGNORE INTERRUPT
001126	001135	7100	00	010	946	TRA	BGNQ1	GO TO BEGINNING OF QUEUE
					947	*		
001127	000000	6350	12	000	948	BGNQ	EAA	0,2
001130	000000	5310	00	000	949	NEG		OVERFLOW CNT IN A-UPPER --- POSITIVE
001131	002157	4050	00	010	950	CMG	SPCNT	CMPARE TO MAX QUEUE OVERFLOW
001132	001134	6040	00	010	951	TMI	*+2	RETAIN OLD MAX-CNT
001133	002157	7550	00	010	952	STA	SPCNT	USE NEW MAX-CNT
001134	501002	2221	11	000	953	LDX2	.CRMB3,1,PB.CR	GET BEG.OF QUEUE FROM REFRESH
001135	701001	7421	11	000	954	BGNQ1	STX2	.CRMB2,1,P.CR
001136	000744	7100	00	010	955	TRA	TRAGN	TRY AGAIN

INTERRUPT HANDLER - PROCESS NORMAL INTERRUPT

					957 *						
					958 *						
					959 *						
001137	000653	2360	00	010	960	NOPSIA	LDQ	TIMEX+1	PUT CHANNEL STOP TIME		ANON0640
001140	701003	7561	11	000	961		STQ	.CRMB4,1,P.CR	IN MAILBOX		IOS03795
001141	001706	6754	00	010	962		LDD	PB.CR,BYPCR	SET CACHE BYPASS CR		
001142	701002	2251	11	000	963		LDX5	.CRMB3,1,P.CR	GET STATUS WORDS POINTER		
001143	000666	6000	00	010	964		TZE	GTCHN	NULL, IGNORE INTERRUPT		IOS04A5R
001144	200000	0321	15	000	965		LDQC	0,5,P.RMS	INTERRUPTING CHNNEL STATUS WORD1		
					966 *						
					967 *						
					968	FXLVL	NULL	FIX IOM INTERRUPT LEVELS			
	001145				969		LXL2	.CRIO4,1,P.CR	GET LOGICAL CHAN. INDEX		
001145	701203	7221	11	000	970		ANX2	.FCHNX,DU			
001146	003774	3620	03	000	971		EAX0	-1,0	INT TYPE: T=0, M=1, S=2		IOS03835
001147	777777	6200	10	000	972		TZE	ITERM	TERMINATE		IOS03840
001150	001156	6000	00	010	973		CMPX0	2,DU	IS IT SPECIAL		IOS03845
001151	000002	1000	03	000	974		TNZ	GTCHN	NO, IGNORE IT		IOS03850
001152	000666	6010	00	010	975		EAX4	0	YES, SET I/O ENTRY NULL		IOS03855
001153	000000	6240	00	000	976		EAX0	4	SET TYPE = 4		IOS03860
001154	000004	6200	00	000	977		EAX6	0	SET IHLR KPX		IOS03865
001155	000000	6260	00	000	978	ITERM	LDA	.CRCT1,2,P.CR			IOS03870
001156	701400	2351	12	000	979		CMPA	.DC355*4C96+4096,DU	IS DEVICE DN355		IOS03875
001157	020000	1150	03	000	980		TRC	NT355	NO		IOS03880
001160	001211	6030	00	010	981		EAX4	0	SET NO ENTRY FLAG		IOS03885
001161	000000	6240	00	000	982		LDX6	.CRCT4,2,P.CR	IS CHANNEL CONFIGURED		IOS03890
001162	701403	2261	12	000	983		TZE	GTCHN	NO, IGNORE INTERRUPT		IOS03895
001163	000666	6000	00	010	984 *						
001164	200001	0321	15	000	985		LDQC	1,5,P.RMS	GET STATUS WORD		
001165	000000	6260	00	000	986		EAX6	0			EL8.
001166	350350	2250	03	000	987		LDX5	=0350350,DU	SET 350 IND IN X5		
001167	001661	7100	00	010	988		TRA	TRCOFF			IOS03910
					989 *						IOS03915
					990	.FIOM	BOOL	560000	NO SYNC BIT SOFTWARE STATUS		IOS04AAM
001170	000070	7160	00	010	991	FSTAT	XEC	DEBUG	SHALL WE IGNORE PROBLEM		IOS04AAM
001171	000002	7100	04	000	992		TRA	2,IC	NO, GEPR IT		IOS04AAM
001172	000666	7100	00	010	993		TRA	GTCHN	YES, FORGET IT		IOS04AAM
001173	560000	2360	03	000	994		LDQ	.FIOM,DU	GIN UP UNIQUE STATUS		IOS04AAM
001174	200000	7561	15	000	995		STQ	0,5,P.RMS	FOR GEPR REISSUE		IOS03925
001175	001223	7100	00	010	996		TRA	ILVL2			IOS04AAM
					997 *						
					998 *						
					999	INIT	NULL	PROCESS INITIATE INTERRUPT			
001176	000002	2200	03	000	1000		LDX0	2,DU	SET INITIATE INTERRUPT IND.		
					1001 *				CHECK FOR POWER ON/OFF		
001177	501000	7241	11	000	1002		LXL4	.CRMB1,1,PB.CR	GET LPW		
001200	007777	3640	03	000	1003		ANX4	=07777,DU	ISOLATE TALLY OF LPW		
001201	007777	1040	03	000	1004		CMPX4	=07777,DU	HAS TALLY DECREMENTED ?		
001202	001217	6010	00	010	1005		TNZ	ILVL	YES		IOS03940
					1006 *						

INTERRUPT HANDLER - PROCESS NORMAL INTERRUPT

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001203 701200 2241 11 000 1007 ININ1 NULL
001203 701200 2241 11 000 1008 LDX4 .CRI01,1,P.CR GET I/O ENTRY ADDR.
001204 000666 6000 00 010 1009 TZE GTCHN NO ACTIVE ENTRY -- IGNORE
001205 100023 1041 00 000 1010 CMPX4 .WEACF,,F.IOQ IS THIS SPECIAL I/O IOS00740
001206 001223 6030 00 010 1011 TRC ILVL2 NO IOS00750
001207 100007 2261 14 000 1012 LDX6 .WEOFF,4,P.IOQ DCW RELATIVE TO DATA IOS03950
001210 001222 7100 00 010 1013 TRA INIT2 IOS03955
1014 *
001211 000000 6200 10 000 1015 NT355 EAX0 0,0 IS THIS TERMINATE IOS03965
001212 001440 6010 00 010 1016 TNZ ITTRC NO, SPECIAL IOS03970
001213 400000 3160 03 000 1017 CANQ .FBT0,DU IS SYNC BIT SET IOS04AAM
001214 001170 6000 00 010 1018 TZE FSTAT NO, BAD NEWS IOS04AAM
001215 000002 3160 03 000 1019 CANQ .FBT16,DU YES, WAS IT INITIATE IOS03975
001216 001176 6010 00 010 1020 TNZ INIT YES IOS03980
001217 200001 2261 15 000 1021 ILVL LDX6 1,5,P.RMS SECOND STATUS WORD IOS03985
001220 501001 1261 11 000 1022 SBLX6 .CRMB2,1,PB.CR IOS03990
001221 501001 1261 11 000 1023 SBLX6 .CRMB2,1,PB.CR RELATIVIZED IOS03995
001222 200001 7461 15 000 1024 INIT2 STX6 1,5,P.RMS STORE 2D WORD IOS04000
1025 *
001223 001223 1026 ILVL2 NULL PROCESS TERMINATE INTERRUPT
1027 *
001223 701200 2241 11 000 1028 LDX4 .CRI01,1,P.CR FETCH ACTIVE I/O ENTRY OFFSET
001224 000666 6000 00 010 1029 TZE GTCHN IGNORE IT
001225 501002 2351 11 000 1030 LDA .CRMB3,1,PB.CR GET STATUS PCINTER IOS04855
001226 100010 7561 14 000 1031 STQ .WEEP1,4,P.IOQ SAVE SW#1 IOS04860
001227 200001 0341 01 000 1032 LDAC 1,AU,P.RMS
001230 100012 7551 14 000 1033 STA .WEEP2,4,P.IOQ SAVE SRW#
001231 100003 7261 14 000 1034 LXL6 .WEPID,4,P.IOQ SET KPX IOS00770
001232 100023 1041 00 000 1035 CMPX4 .WEACF,,F.IOQ IS THIS SPECIAL I/O IOS00780
001233 001440 6020 00 010 1036 TNC ITTRC YES IOS00790
1037 *
1038 *
1039 * * * * *
1040 * QR = STATUS WCRD1
1041 *
1042 * X0 = INTERRUPT LEVEL (BIT 15-17)
1043 * 0 = TERMINATE
1044 * X2 = LOGICAL CHAN INDEX
1045 * X3 = IOM # (BIT16-17)
1046 * X4 = I/O ENTRY OFFSET RELATIVE TO IOQ SEGMENT
1047 * X5 = PAT OFFSET RELATIVE TO PAT SEGMENT
1048 * X6 = KPX
1049 * X7 = PROCESSOR # ANON1140
1050 *
1051 * ODR0=
1052 * ODR1= P.IOQ =I/O ENTRY POOL SEGMENT TYPE=0
1053 * ODR2= P.RMS
1054 * ODR3= P.KL
1055 * ODR4= P.DDD
1056 * ODR6= P.SSA =SSA DATA SEGMENT OF PCPM TYPE=2

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INTERRUPT HANDLER - PROCESS NORMAL INTERRUPT

					1057 *	ODR5	P.KL			
					1058 *	ODR7=	P.CR =CR SEGMENT			
					1059 *					
					1060	INHIB	ON			
001234	002415	7526	00	010	1061	STWS	WSAV+1	SAVE LOWER WSR		
001235	000000	6352	16	000	1062	EAA	0,6			
001236	000002	7352	00	000	1063	ALS	2			
001237	006024	4706	07	000	1064	LDP	P.PID,SD.PID,DL	LOAD PID SEG.		
001240	000001	7727	01	000	1065	LDWS	1,AU,P.PID	LOAD WS FOR P.SSA,P.PAT ETC.		
001241	006204	4706	07	000	1066	LDP	PO,SD.PSH,DL			
001242	000002	6707	00	000	1067	LDD	P.PAT,PH.PAT,,PO	GET PAT DESC.		
001243	100025	7527	14	000	1068	STWS	.WEEND+1,4,P.IOQ	SAVE IT FOR CHAN. MOD USE		
001244	100005	2253	14	000	1069	LDX5	.WEPEP,4,P.IOQ	FETCH PAT POINTER OFFSET		
001245	001251	6012	00	010	1070	TNZ	ILVPT	NOT A SYSTEM I/O		
001246	000363	6252	00	000	1071	EAX5	.CRACF+2	COUNT TIME USING SYSTEM ACTFL PAT		
001247	006130	4706	07	000	1072	LDP	P.PAT,SD.CR,DL	LOAD PAT DESC FOR ACCT		
001250	001257	7102	00	010	1073	TRA	PRTIM	ACCT		
					1074 *					
					1075 *					
	001251				1076	ILVPT	NULL			
001251	000000	2253	15	000	1077	LDX5	0,5,P.PAT	GET PAT OFFSET		
001252	037777	3652	03	000	1078	ANX5	=037777,DU	ISOLATE OFFSET		
001253	037777	1052	03	000	1079	CMPX5	.FADJ,DU	TEST TSS PAT		CALL8620
001254	001257	6012	00	010	1080	TNZ	PRTIM	NO		CALL8625
001255	100005	2253	14	000	1081	LDX5	.WEPEP,4,P.IOQ	YES, RETRIEVE FILE POINTER		CALL8630
001256	000003	6252	15	000	1082	EAX5	.OFFS,5	APPLY BIAS		CALL8635
					1083 *					
					1084 *					
					1085 *					
	001257				1086	PRTIM	NULL	DO PERIPHERAL TIME ACCOUNTING		
001257	700513	2343	00	000	1087	SZN	.CRSRM,,P.CR	IS STATUS MODIFIER ACTIVE		IOS00700
001260	001334	6012	00	010	1088	TNZ	SRMT	YES, CHECK IT OUT		IOS00710
001261	701003	2353	11	000	1089	LDA	.CRMB4,1,P.CR	GET INTERRUPT TIME		
001262	002720	7552	00	010	1090	STA	EBUFF+6	SAVE IT FOR ACCT RECORD		
001263	701201	1353	11	000	1091	SBLA	.CRIO2,1,P.CR	TIME AT CONNECT		
001264	001302	6042	00	010	1092	TMI	TYPEW	ERROR, IGNORE TIMES		EL8.
001265	000010	0752	07	000	1093	ADA	8,DL	ROUND TO		IOS05575
001266	000004	7312	00	000	1094	ARS	4	16 MICROSECOND UNITS		IOS05580
001267	000001	0553	15	000	1095	ASA	1,5,P.PAT	ACCUMULATE I/O TIME FOR FILE		
001270	100004	2253	14	000	1096	LDX5	.WESCT,4,P.IOQ	GET SCT OFFSET		
001271	017774	3652	03	000	1097	ANX5	.FSCT1,DU			
001272	700000	2253	15	000	1098	LDX5	0,5,P.CR			
001273	770000	3652	03	000	1099	ANX5	.FDVTP,DU	ISOLATE DEVICE TYPE		
001274	310000	1052	03	000	1100	CMPX5	.DSCC1*4096,DU	IS IT SCC ?		
001275	001302	6002	00	010	1101	TZE	TYPEW			
001276	600202	0553	00	000	1102	ASA	.STCHT,,P.SSA	ADD TO TOTAL SLAVE CHANNEL TIME		
001277	600107	0553	00	000	1103	ASA	.SLTT,,P.SSA	ADD TO DISPATCHER INTERVAL SLICE		
001300	000000	5312	00	000	1104	NEG				
001301	600000	0553	00	000	1105	ASA	.SACHT,,P.SSA	SUBTRACT FROM ALLOWABLE CHAN TIME		
	001302				1106	TYPEW	NULL			

INTERRUPT HANDLER - PROCESS NORMAL INTERRUPT

001302	002415	7726	00	010	1107	LDWS	WSAV+1	RELOAD WSR 4-7	EL8.
					1108	INHIB	OFF		
001303	701200	7251	11	000	1109	LXL5	.CRI01,1,P.CR		
001304	100000	3050	03	000	1110	CANX5	=0100000,DU	IS THIS A PSI CHANNEL ?	
001305	001440	6000	00	010	1111	TZE	ITTRC	NO	
					1112 *				
					1113	INHIB	ON	CHECK THE CONNECT TIME ON PSIA CHAN	
001306	001437	7472	00	010	1114	STX7	OUT+1		ANON1160
001307	001436	7432	00	010	1115	STX3	OUT	SAVE INDEX	
001310	000000	6272	11	000	1116	EAX7	0,1	SET TCX IN X7	
001311	701200	7253	17	000	1117	LXL5	.CRI01,7,P.CR		
001312	777774	6272	17	000	1118	EAX7	-4,7	CHECK PREVIOUS CHAN	
001313	001321	7032	00	010	1119	TSX3	TIME	LOOK BACK	
001314	000000	6272	11	000	1120	EAX7	0,1		
001315	000004	6272	17	000	1121	EAX7	4,7	CHECK NEXT CHAN	
001316	701200	7253	17	000	1122	LXL5	.CRI01,7,P.CR		
001317	001321	7032	00	010	1123	TSX3	TIME	LOCK FORWARD	
001320	001436	7102	00	010	1124	TRA	OUT		
					1125 *				
					001321				
					1126	TIME	NULL		
001321	300000	3652	03	000	1127	ANX5	=0300000,DU		
001322	300000	1052	03	000	1128	CMPX5	=0300000,DU	IS THIS CHAN PSI & PRIMARY CHAN ?	
001323	000000	6012	13	000	1129	TNZ	0,3	NO	
001324	701200	2253	17	000	1130	LDX5	.CRI01,7,P.CR		
001325	777775	6002	13	000	1131	TZE	-3,3	CHAN NOT BUSY, DONT UPDATE	
001326	701201	2353	17	000	1132	LDA	.CRI02,7,P.CR	THIS PSIA CHAN. CONNECT TIME	
001327	701201	1153	11	000	1133	CMPA	.CRI02,1,P.CR	INTERRUPTING CHAN. CONNECT TIME	
001330	777775	6022	13	000	1134	TNC	-3,3		
001331	002720	2352	00	010	1135	LDA	EBUFF+6	GET THIS INTERRUPT TIME	
001332	701201	7553	17	000	1136	STA	.CRI02,7,P.CR	UPDATE CHAN, TIME	
001333	777775	7102	13	000	1137	TRA	-3,3	LOOK AT NEXT CHAN	
					1138 *				

STATUS RETURN MODIFIER INTERFACE

001334	370000	3162	03	000	1140	SRMT	CANQ	=0370000,DU	IS STATUS CH RDY	IOS05625
001335	001261	6012	00	010	1141		TNZ	PRTIM+2	NO	IOS05630
001336	000007	2352	07	000	1142		LDA	7,DL		IOS05635
001337	600016	2153	00	000	1143		CNA A	.SWIT,,P.SSA	IS SWITCH SET PROPERLY	IOS05640
001340	001261	6012	00	010	1144		TNZ	PRTIM+2	NO	IOS05645
001341	100005	2353	14	000	1145		LDA	.WEPEP,4,P.I0Q	GET QUE STATUS	IOS05650
001342	002000	3152	07	000	1146		CANA	.FSGPR,DL	IS THIS SPECIAL GEPR I/O	IOS05655
001343	001261	6012	00	010	1147		TNZ	PRTIM+2	YES, LEAVE IT BBE	IOS05660
001344	001430	6326	00	010	1148		EPPR	P2,SRMT2		EL8.
001345	600221	4527	00	000	1149		STP	P2,,SVFLT,,P.SSA	SET VICAR	EL8.
001346	001436	7432	00	010	1150		STX3	OUT	SAVE XR3	EL8.
001347	006204	4726	07	000	1151		LDP	P2,SD,PSH,DL	YES, GET PUSH DESCRIPTOR	IOS05665
001350	200012	6727	00	000	1152		LDD	P2,PH,USL,,P2	GET LKG SEGMENT	IOS05670
001351	001437	7472	00	010	1153		STX7	OUT+1		ANON1180
001352	200000	6727	00	000	1154		LDD	P2,0,,P2	GET USER SEGMENT	IOS05675
001353	200021	2273	00	000	1155		LDX7	17,,P2	GET COMM WORD	IOS05680
001354	777775	1072	03	000	1156		CMPX7	-3,DU	IS IT VALID	IOS05685
001355	001432	6012	00	010	1157		TNZ	SRMT2+2	NO	IOS05690
001356	200021	7273	00	000	1158		LXL7	17,,P2	GET TABLE POINTER	IOS05695
001357	100005	2233	14	000	1159		LDX3	.WEPEP,4,P.I0Q	GET FILE POINTER	IOS05705
001360	010000	3362	07	000	1160		LCQ	=010C0C,DL	SET FILE CODE MASK	IOS05710
001361	000004	6272	17	000	1161	SRMFC	EAX7	4,7	BUMP INDEX	IOS05715
001362	277774	2353	17	000	1162		LDA	-4,7,P2	GET TABLE ENTRY	IOS05720
001363	001430	6046	00	010	1163		TMOZ	SRMT2	NULL	IOS05725
001364	000000	2113	13	000	1164		CMK	0,3,P.PAT	DOES FILE CODE MATCH	IOS05730
001365	001361	6012	00	010	1165		TNZ	SRMFC	NO, LOOK AGAIN	IOS05735
001366	277774	1003	17	000	1166		CMPX0	-4,7,P2	YES, IS INTERRUPT TYPE OK	IOS05740
001367	001361	6012	00	010	1167		TNZ	SRMFC	NO	IOS05745
001370	277776	7233	17	000	1168		LXL3	-2,7,P2	GET I/O COUNT	IOS05750
001371	000001	6232	13	000	1169		EAX3	1,3	+1	IOS05755
001372	277776	4433	17	000	1170		SXL3	-2,7,P2	NEW I/O COUNT	IOS05760
001373	277776	1033	17	000	1171		CMPX3	-2,7,P2	READY FOR MODIFY YET	IOS05765
001374	001430	6042	00	010	1172		TMI	SRMT2	NO	IOS05770
001375	001412	6002	00	010	1173		TZE	SRMOD	RIGHT ON	IOS05775
001376	100005	2353	14	000	1174		LDA	.WEPEP,4,P.I0Q		IOS05780
001377	004000	3152	07	000	1175		CANA	.FREIS,DL	IS ENTRY GEPR RETRY	IOS05785
001400	001406	6002	00	010	1176		TZE	SRMNO	NO	IOS05790
001401	277777	7233	17	000	1177		LXL3	-1,7,P2	YES	IOS05795
001402	000001	6232	13	000	1178		EAX3	1,3	RETRY COUNT +1	IOS05800
001403	277777	4433	17	000	1179		SXL3	-1,7,P2	SAVED	IOS05805
001404	277777	1033	17	000	1180		CMPX3	-1,7,P2	IS IT ENOUGH	IOS05810
001405	001412	6046	00	010	1181		TMOZ	SRMOD	NO, MODIFY STATUS	IOS05815
001406	000000	6232	00	000	1182	SRMNO	EAX3	0	YES	IOS05820
001407	277776	4433	17	000	1183		SXL3	-2,7,P2	RESET COUNTS	IOS05825
001410	277777	4433	17	000	1184		SXL3	-1,7,P2		IOS05830
001411	001430	7102	00	010	1185		TRA	SRMT2	& EXIT	IOS05835
					1186	*				IOS05840
001412	277775	2353	17	000	1187	SRMOD	LDA	-3,7,P2	GET NEW STATUS, BUFFER PTR	IOS05845
001413	100010	2363	14	000	1188		LDQ	.WEEP1,4,P.I0Q	GET ORIGINAL STATUS	IOS05850
001414	200013	7563	05	000	1189		STQ	11,AL,P2	SAVE ORIG STATUS	IOS05855

STATUS RETURN MODIFIER INTERFACE

001415	014042	3762	00	010	1190	ANQ	=0400C7777777	DROP MS/SS	IOS05860
001416	100010	7563	14	000	1191	STQ	.WEEP1,4,P.I0Q		IOS05865
001417	000000	6232	01	000	1192	EAX3	0,AU		IOS05870
001420	100010	2433	14	000	1193	ORSX3	.WEEP1,4,P.I0Q	SET DESIRED STATUS	IOS05875
001421	000004	6362	14	000	1194	EAQ	4,4	I/O ENTRY POINTER	IOS05880
001422	200000	0543	05	000	1195	AOS	0,AL,P2	SET ACTIVITY FLAG	IOS05885
001423	000000	6352	05	000	1196	EAA	0,AL	BUFFER POINTER	IOS05890
001424	000002	7372	00	000	1197	LLS	2	BYTE ADDRESSES	IOS05895
001425	000101	1007	02	000	1198	MLR	(1,,,QU),(1,,,AU)	MOVE DATA TO BUFFER	IOS05900
001426	100000	0000	50	000	1199	ADSC9	0,0,40,P.I0Q		IOS05905
001427	200001	0000	50	000	1200	ADSC9	1,0,40,P2		IOS05910
001430	100010	2363	14	000	1201	SRMT2 LDQ	.WEEP1,4,P.I0Q	RESTORE STATUS WORD	IOS05915
001431	001436	2232	00	010	1202	LDX3	OUT	RESTORE XR3	IOS05920
001432	001437	2272	00	010	1203	LDX7	OUT+1		ANON1200
001433	600221	4503	00	000	1204	STZ	.SVFLT,,P.SSA	CLEAR VICAR	EL8.
001434	006063	4726	07	000	1205	LDP	P.RMS,SD,RMS,DL	RESTORE P2	IOS05930
001435	001261	7102	00	010	1206	TRA	PRTIM+2	RETURN TO NORMAL FLOW	IOS05935

INTERRUPT HANDLER - PROCESS INTERRUPT

					001436	1208	OUT	NULL					
001436	000000	2232	03	000	1209			LDX3	**DU	RESTORE X3			
001437	000000	6272	00	000	1210			EAX7	**				ANON1220
					1211	*							
					001440	1212	ITTRC	NULL					
					1213			INHIB	ON				
001440	002416	4502	00	010	1214			STZ	BUFFLG	INTERNAL BUFFER FLAG			
001441	000004	1002	03	000	1215			CMPX0	4DU	SPECIAL INTERRUPT ?			
001442	001561	6002	00	010	1216			TZE	NTHSH	YES			
001443	000000	6232	02	000	1217			EAX3	0QU	LOAD FIRST STATUS WARD			
001444	370000	3632	03	000	1218			ANX3	=0370000DU	RETAIN POWER BIT AND MATOR STATUS			
001445	000000	6252	13	000	1219			EAX5	03	SAVE X3			
001446	100023	1043	00	000	1220			CMPX4	.WEACF,,F.IOQ	IS THIS SPECIAL I/O			IOS00820
001447	001454	6032	00	010	1221			TRC	CKRDY	NO			IOS00830
001450	100013	2243	14	000	1222			LDX4	.WEIOS,4,P.IOQ	YES, SET SPECIAL FLAG			IOS00840
001451	777777	2352	07	000	1223			LDA	-1,DL	YES,NO RECORD ON SPECIAL COMMAND			
001452	002416	7552	00	010	1224			STA	BUFFLG	CANNOT OVERRIDE			
001453	001561	7102	00	010	1225			TRA	NTHSH	SPECIAL CMD NO RECORD OR EXCHG			
					1226	*							
					1227	*							
001454	012367	3162	04	14043	1228	CKRDY	CANQ	=0377700770000,\$	IS ANY STATUS BIT SET ?				
001455	001506	6002	00	010	1229			TZE	NOREC	CHANNEL READY, SKIP ERROR EXIT			
001456	100004	2353	14	000	1230			LDA	.WESCT,4,P.IOQ				
001457	200000	3152	03	000	1231			CANA	.FTAD,DU	T&D I/O ?			
001460	001504	6012	00	010	1232			TNZ	DOVER	YES SKIP			
001461	100011	2353	14	000	1233			LDA	.WEFCM,4,P.IOQ	GET CMD FROM I/O ENTRY			
001462	100011	7413	14	000	1234			STX1	.WEFCM,4,P.IOQ	SAVE TCX IN .WEFCM OF I/O ENTRY			
001463	100011	2553	14	000	1235			ORSA	.WEFCM,4,P.IOQ	PUT COMMAND BACK IN			
001464	100005	2353	14	000	1236			LDA	.WEPEP,4,P.IOQ				
001465	004000	3152	07	000	1237			CANA	.FREIS,DL	IS IT GEPR REISSUE			
001466	001504	6012	00	010	1238			TNZ	DOVER	YES SKIP			
001467	012355	3162	04	14044	1239			CANQ	=0200000770000,\$				
001470	001502	6012	00	010	1240			TNZ	WREC	FORCE TYPE 3			
001471	170000	3162	03	000	1241			CANQ	=0170000,DU				
001472	001506	6002	00	010	1242			TZE	NOREC	SKIP,REDY			
001473	020000	1032	03	000	1243			CMPX3	=020000,DU				
001474	001506	6002	00	010	1244			TZE	NOREC	SKIP,DEVICE ATTENTION			
001475	040000	1032	03	000	1245			CMPX3	=040000,DU				
001476	001506	6002	00	010	1246			TZE	NOREC	SKIP,EOF			
001477	000001	3232	03	000	1247			LCX3	1,DU				
001500	002416	7432	00	010	1248			STX3	BUFFLG				
001501	001506	7102	00	010	1249			TRA	NOREC				
					1250	*							
					1251	*							
					1252	*							
					001502	1253	WREC	NULL					
001502	000001	3232	03	000	1254			LCX3	1,DU				
001503	002416	7432	00	010	1255			STX3	BUFFLG	TYPE 3 REQUESTED			
					001504	1256	DOVER	NULL					
001504	000001	3232	03	000	1257			LCX3	1,DU	CANNOT OVERRIDE IOS			

INTERRUPT HANDLER - PROCESS INTERRUPT

001505	002416	4432	00	010	1258	SXL3	BUFFLG	
					1259	*		
					1260	*		
					1261	NOREC	NULL	
					1262	LDA	.WEPRV,4,P.I0Q	
001506	100001	2353	14	000	1263	CANA	.FFTYF,DL	IS IT SYSTEM I/I
001507	100000	3152	07	000	1264	TNZ	NOTEX	YES CAN NOT EXCHG
001510	001522	6012	00	010	1265	LDX3	.WESCT,4,P.I0Q	
001511	100004	2233	14	000	1266	ANX3	.FSCT,DU	ISOLATE DEVICE SCT
001512	017777	3632	03	000	1267	CMPX3	.CREXG,,P.CR	DEVICE EXCHANGE REQUESTED ?
001513	700640	1033	00	000	1268	TNZ	NOTEX	NO, NOT REQUESTED
001514	001522	6012	00	010	1269	LDA	.FSGPR,DL	
001515	002000	2352	07	000	1270	CANA	.WEPEP,4,P.I0Q	IS THIS SPECIAL GEPR CMD ?
001516	100005	3153	14	000	1271	TNZ	NOTEX	NO, EXCHANGE ON SPECIAL GPR CMD
001517	001522	6012	00	010	1272	LDA	.FEXRQ,DL	EXCHANGE REQUEST BIT
001520	000010	2352	07	000	1273	ORSA	.WEST,4,P.I0Q	SET EXCHANGE STATUS FOR CHANNEL MODUL
001521	100000	2553	14	000	1274	*		
					1275	NOTEX	NULL	
001522	000000	6232	15	000	1276	EAX3	0,5	RELOAD X3
					1277	*		
					1278	*		

INTERRUPT HANDLER - CHECK ERROR THRESHOLDS

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1280 *
001523 100004 2253 14 000 1281 LDX5 .WESCT,4,P.I0Q
001524 017777 3652 03 000 1282 ANX5 .FSCT,DU ISOLATE DEVICE SCT
001525 000002 6252 15 000 1283 EAX5 2,5 POINT TO .CRCT3 ASSUME MULTI DEV
001526 010000 2352 07 000 1284 LDA .FMLTD,DL TEST FOR MULTI
001527 777776 3153 15 000 1285 CANA -2,5,P.CR IN .CRCT1
001530 001532 6012 00 010 1286 TNZ *+2 IT IS MULTI .CRCT3= # OF CONNECTS
001531 001202 6252 11 000 1287 EAX5 .CRI03,1 SINGLE DEV POINT TO CRI03 FOR # CONNE
001532 000077 2352 07 000 1288 LDA =077,DL MASK FOR 64 CONNECTS
001533 700000 3153 15 000 1289 CANA 0,5,P.CR SEE IF 64TH NOW
001534 001561 6012 00 010 1290 TNZ NTHSH NO FORGET TEST
1291 *
1292 * THIS IS 64TH CONNECT SEE IF ERROR THRESHOLD REACHED
1293 *
001535 700001 2353 15 000 1294 LDA 1,5,P.CR GET # OF ERRS FOR EITHER .CRI03 OR .C
001536 770000 3752 03 000 1295 ANA =0770000,DU SEE IF ANY ERRORS IOS01220
001537 001561 6002 00 010 1296 TZE NTHSH NO FORGET TEST
1297 *
1298 * HAD ERRORS SEE IF THRESHOLD REACHED
1299 *
1300 *
001540 700001 6553 15 000 1301 ERSA 1,5,P.CR ZERRO ERROR COUNT INTABLES
001541 000036 7712 00 000 1302 ARL 30 IOS01240
001542 701403 2253 12 000 1303 LDX5 .CRCT4,2,P.CR
001543 400000 4707 15 000 1304 LDP PO,0,5,P.DDD
001544 000000 5076 00 000 1305 AWDX 0,,PO EL8.
001545 000005 7253 00 000 1306 LXL5 5,,PO LOAD THRESHOLD COUNT
001546 001547 7452 00 010 1307 STX5 THRSO
001547 000000 1152 07 000 1308 THRSO CMPA **,DL TEST ERROR THRESHOLD IOS01260
001550 001561 6022 00 010 1309 TNC NTHSH NOT THRESH LIMIT
1310 *
1311 * REACHED THRESHOLD LIMIT ON DEVICE PUT MSG IN POPS QUEUE
1312 *
001551 002163 7552 00 010 1313 STA MSG+1 SAVE #OF ERROR IN WD2
001552 002170 7532 00 010 1314 SREG REGW SAVE REG,S
001553 100004 2353 14 000 1315 LDA .WESCT,4,P.I0Q SET SCT ADDR
001554 002164 7552 00 010 1316 STA MSG+2
001555 322001 2352 03 000 1317 LDA .MIOS3*512+1,DU MOD# OF IOS EP#
001556 002162 7552 00 010 1318 STA MSG
001557 002313 7052 00 010 1319 TSX5 MISC7 MAKE QUE ENTRY EL8.
001560 002170 0732 00 010 1320 LREG REGW EL8.
1321 *
1322 * ERROR THRESHOLD TEST DONE
1323 *
001561 1324 NTHSH NULL THRESHOLD TEST COMPLETE
1325 *
1326 *
001561 000002 2352 07 000 1327 LDA 2,DL TEST PSIA
001562 701200 3153 11 000 1328 CANA .CRI01,1,P.CR IS THIS SUSPEND CMD CHAN ?
001563 001623 6002 00 010 1329 TZE CHTR NO
    
```

INTERRUPT HANDLER - CHECK ERROR THRESHOLDS

					001564	1330	SUSRT	NULL	SUSPEND CMD SPECIAL STATUS RETURN		
001564	701200	2243	11	000	1331			LDX4	.CRI01,1,P.CR	GET I/O ENTRY OFFSET	
001565	000666	6002	00	010	1332			TZE	GTCHN	IGNORE IT	
					1333	*					
001566	000100	2352	07	000	1334			LDA	=0100,DL		
001567	100011	3153	14	000	1335			CANA	.WEFCM,4,P.IOQ	IS THE SPECIAL T&D BIT PRESENT IN THE I/O ENTRY FOR RETURNIG SPECIAL ST	
					1336	*					
001570	001623	6002	00	010	1337			TZE	CHTR		
001571	000004	1002	03	000	1338			CMPX0	4,DU	YES, CHECK FOR SPI	
001572	001576	6012	00	010	1339			TNZ	NTSPL	NOT SPI	
001573	000045	7372	00	000	1340			LLS	37	SPI--STATUS TO A-REG.CLEAR Q-REG	
001574	000001	7712	00	000	1341			ARL	1	ZERO SPI SYNC BIT	
001575	001602	7102	00	010	1342			TRA	NSPL1	RETURN STATUS TO USER	
					1343	*					
					1344	*					
					001576						
001576	014045	3162	00	010	1345			NTSPL	NULL		
001577	000666	6002	00	010	1346			CANQ	=037777770000	IS CHAN. STATUS READY ?	
001600	100010	2353	14	000	1347			TZE	GTCHN	YES IGNORE IT	
001601	100012	2363	14	000	1348			LDA	.WEEP1,4,P.IOQ	GET STATUS WORDS	IOS04AAC
001602	100012	2363	14	000	1349			LDQ	.WEEP2,4,P.IOQ		IOS04AAC
001602	701400	7263	12	000	1350			NSPL1	LXL6	.CRCT1,2,P.CR	
001603	040000	3062	03	000	1351			CANX6	.FPRCH,DU	IS THIS A PRIMARY CHANNEL ?	
001604	001607	6002	00	010	1352			TZE	*+3	YES	
001605	701400	7223	12	000	1353			LXL2	.CRCT1,2,P.CR		
001606	003774	3622	03	000	1354			ANX2	.FCHNX,DU	LPCX	
001607	100003	7263	14	000	1355			LXL6	.WEPID,4,P.IOQ	GET KPX	
001610	003440	6202	00	010	1356			EAX0	TRLCH	SET RETURN	IOS06480
001611	003036	7102	00	010	1357			TRA	STRET	RETURN STATUS TO USER	IOS06485
					1358	*					
					001612						
001612	004200	6342	07	000	1359			CHAN	NULL	DETERMINE CANNEL NUMBER	
001613	777777	4112	03	000	1360			LDI	=04200,DL	RESET OVERFLOW INDICATOR	IOS04375
					1361			LDE	-1,DU	RESET EXPONENT REGISTER. THE -1 ALLOW FOR NO SIGN BIT POSITION IN A-REG	
					1362	*					
001614	000000	5732	00	000	1363			FNO			
001615	002155	4562	00	010	1364			STE	CHAN1	STORE COMPLEMENT CHA.#	
001616	002155	3362	00	010	1365			LCQ	CHAN1	COMPLEMENT THE NEGATIVE CHA.#	
001617	000012	7722	00	000	1366			QRL	10	CHA# IN BIT 12--17	
001620	400000	2352	03	000	1367			LDA	=0400C00,DU	IMW BIT FOR CHANNEL 0	
001621	000000	7712	02	000	1368			ARL	0,QU	IMW CHA.BIT PROCESSED	
001622	000000	7102	15	000	1369			TRA	0,5		
					1370	*					

INTERRUPT HANDLER - CALL CHANNEL MCDULE EP#1

001651	000005	1002	03	000	1420	CMPX0	5,DU			
001652	001655	6012	00	010	1421	TNZ	*+3			
001653	000053	2752	07	000	1422	ORA	.YPRO0,DL	PROCESS OTHER INTERRUPT		
001654	001656	7102	00	010	1423	TRA	TRSET			
001655	000055	2752	07	000	1424	ORA	.YPROT,DL	PROCESS TERMINATE INTERRUPT		
					1425	TRSET	NULL			
001656	700000	2553	11	000	1426	ORSA	0,1,P,CR			
					1427	.TRPUT	ASIS			
001657	000003	6202	00	000		EAX0	3			
001660	700052	7173	00	000		XED	.CRTRV+8,,P,CR			
					1428	TRCOFF	NULL			
001661	001703	7726	00	010	1429	LDWS	IHWS	SET IHLR WSR 4-7		IOS04AAM
001662	701403	2353	12	000	1430	LDA	.CRCT4,2,P,CR	PREPARE MOD#/EP#1 IN AREG FOR		
001663	400000	4707	01	000	1431	LDP	PO,,AU,P,DDD	SET CHAN MOD. ISR TO PO		
001664	350350	1052	03	000	1432	CMPX5	=0350350,DU	IS THIS 350 ?		
001665	001667	6002	00	010	1433	TZE	*+2			
001666	000000	5076	00	000	1434	AWDX	0,,PO	NOT DNET/ROUT		EL8.
001667	002417	6252	00	010	1435	EAX5	FMTAR			
001670	300114	4757	00	000	1436	LDP	P5,,KLIOS,,P,KL	SET ISR OF IOS		
001671	000001	7103	00	000	1437	TRA	1,,PO	GO TO CHANNEL MODULE		
					1438	EP1RET	NULL			
					1439	*				
					1440	*				
001672	003012	7102	00	010	1441	TRA	TSTRT	.EXIT 0 NORMAL RETURN STATUS & STIO		
001673	003465	7102	00	010	1442	TRA	TGEPR	.EXIT 1 GEPR & STIO		
001674	003605	7102	00	010	1443	TRA	TGSPC	.EXIT 2 GESPEC ACTION		
001675	000666	7102	00	010	1444	TRA	GTCHN	.EXIT 3 NO ACTON ON S.I		
001676	003676	7102	00	010	1445	TRA	SSPCM	.EXIT 4 SPECIAL COMMAND -- RLS CHAN		
001677	003703	7102	00	010	1446	TRA	MTSI	.EXIT 5 START I/O FOR MT S.I		
001700	001710	7102	00	010	1447	TRA	DBUSY	.EXIT 6 DEVICE BUSY, REISSUE		IOS01210
001701	003710	7102	00	010	1448	TRA	TREAD	.EXIT 7 REISSUE CONSOLE READ		
001702	003715	7102	00	010	1449	TRA	TERRT	.EXIT 8 ERROR THRESHOLD		
					1450	*				
001703	014020024030			000	1451	IHWS	OOCT 014020024030	IHLR WSR 4-7		IOS04AAM
001704	000002750640			000	1452	POPVEC	VEC .ISR,MSG,3,(R,W)			
001705	002162001762			010						
001706	777777740640			000	1453	BYPCR	VEC .DR7,0,*,*(R,W,B)			
001707	000000001777			000						
					1454	*				IOS01230
					1455	DBUSY	.SHUT .CRGGT,,P,CR			IOS01235
001713	007707	7032	00	010	1456	TSX3	STGPC	REISSUE I/O		IOS01240
001714	000666	7102	00	010	1457	TRA	GTCHN	LOOK AT OTHER CHANNELS		IOS01250

ALL CHANNELS PROCESSED - PREPARE TO EXIT

					1459 *				
					1460	INHIB	ON		
				001715	1461	TMOR	NULL	LOST INTERRUPT CHECK	
001715	100003	2203	00	000	1462	LDX0	.WEPAD,,P.IOQ	TEST FOR PAGE ACTIVITY	IOS04945
001716	002260	6012	00	010	1463	TNZ	PAGER	YES, GET AT IT	IOS04950
					001717	1464	ITLST1	NULL	IOS04955
001717	006133	4736	07	000	1465	LDP	P.KL,SD,KL,DL	RESTORE KL DESCRIPTOR	IOS04AAD
001720	700430	0543	00	000	1466	AOS	.CRLIT,,P.CR	BUMP INTERRUPT COUNT	IOS04AAD
001721	002006	6052	00	010	1467	TPL	ITLST	TIME TO LOOK FOR LCST ONES	IOS04AAD
001722	000224	7502	00	010	1468	STC2	IGATE	OPEN IHLR TO THE WORLD	IOS04AAD
001723	300107	4503	17	000	1469	STZ	.KLINT,7,P.KL		ANONC670
001724	000060	2342	00	000	1470	SZN	DISOPT	IS REDISPATCH ON	ANONC680
001725	001774	6012	00	010	1471	TNZ	TMOR1	YES	ANONC690
					1472 *				IOS01430
					1473 *				IOS01435
					1474 *			CONDITIONAL REDISPATCH ON INTERRUPTS HAS BEEN OPTED.	IOS01440
					1475 *			60 OCTAL 0 PATCH WAS PRESENT...	IOS01445
					1476 *			REDISPATCH WILL BE DONE ONLY TO COURTESY CALLS AND ONLY IF	IOS01450
					1477 *			THE INTERRUPTED PROCESS IS AT MAIN LEVEL (NOT IN CC)	IOS01455
					1478 *				IOS01460
001726	000644	2262	17	010	1479	LDX6	MYPRG,7	WAS A PROCESS INTERRUPTED	EL8.
001727	002001	6002	00	010	1480	TZE	TMOR2	NO	EL8.
001730	300044	7463	17	000	1481	STX6	.KLPRG,7,P.KL	YES, RETORE KPX	EL8.
001731	006024	4706	07	000	1482	LDP	P.PID,SD,PID,DL		IOS01080
001732	000000	2353	17	000	1483	LDA	0,7,P.PID	CURRENT KPID INDEX	RDSP2170
001733	000001	7727	01	000	1484	LDWS	1,AU,P.PID	RELOAD WSR 4-7	EL8.
001734	000002	7737	01	000	1485	LDSS	2,AU,F.PID	RELOAD USER S/S	RDSP2180
001735	001764	4746	07	000	1486	LDP	P.SS,.SSR,DL	YES, GET S/S DESCR	IOS01475
001736	700040	4133	00	000	1487	RSCR	32,,P.CR	GET TIME OF DAY	IOS01480
001737	006145	4766	07	000	1488	LDP	P.SSA,SD,SSA,DL	GET SSA DESCRIPTOR	IOS01485
001740	700072	7563	17	000	1489	STQ	.CRCK,7,P.CR		IOS01490
001741	001761	4746	07	000	1490	LDP	P.SS,.CTYP,DL	MAKE TYPE = 0	IOS01495
001742	000652	1372	00	010	1491	SBLAQ	TIMEX	GET DELTA TIME	ANONC710
001743	700264	0563	17	000	1492	ASQ	.CRLCK,7,P.CR	ADJUST LAST TIME	IOS01505
001744	400057	6373	00	000	1493	LDT	.WTIMR,,P.SS	RESET TIME SLICE	IOS01510
001745	300050	7203	00	000	1494	LXLO	.KLSCC,,P.KL	IS ANY COURTESY CALL WAITING	IOS01515
001746	001774	6002	00	010	1495	TZE	TMOR1	NO, RETURN TO INTERRUPTION	IOS01520
001747	000404	2202	03	000	1496	LDX0	.FBT9+.FBT15,DU	GET CC TEST BITS	IOS01525
001750	600017	3003	00	000	1497	CANX0	.STATE,,P.SSA	IS INTERRUPTED PROGRAM IN CC	IOS01530
001751	001774	6012	00	010	1498	TNZ	TMOR1	YES, RETURN TO INTERRUPTION	IOS01535
					1499 *				IOS01540
					1500 *			INTERRUPTED PROCESS WAS AT MAIN LEVEL BUT A COURTESY CALL	IOS01545
					1501 *			IS WAITING TO BE PAID. WE WILL REDISPATCH NOW...	IOS01550
					1502 *				IOS01555
					1503 *				IOS01560
001752	001772	0542	00	010	1504	AOS	REDSP		IOS01565
001753	600231	0543	00	000	1505	AOS	.STINT,,P.SSA		IOS01570
001754	000000	4716	07	000	1506	DISPA	LDP	P1,**,DL	.MDISP SEGID
					001755	1507	.SHUT	.CRDSP,,P.CR	
001760	001762	6306	00	010	1508	EPPR	PO,DI SPB	SET RETURN	IOS01585

ALL CHANNELS PROCESSED - PREPARE TO EXIT

001761	100011	7103	00	000	1509	TRA	9,,P1	.CALL .MDISP,9	IOS01590
					1510	*			IOS01595
001762	000000	4706	07	000	1511	DISPB LDP	PO,**,DL	.MDISP SEGID	IOS01600
		001763			1512	.OPEN	.CRDSP,,P.CR		IOS01605
001765	700100	2343	17	000	1513	SZN	.CRCMC,7,P.CR	IS PROC GOING OUT-OF-SERVICE	ANON1890
001766	000001	6053	00	000	1514	TPL	1,,PO	NO, DISPATCH IT	ANON1900
		001767			1515	STOP .GOTO	.MFALT,1	YES, PARK IT	ANON1910
						INHIB	SAVE,ON		
001767	000002	6306	04	1771		EPPRO	**2,\$		
001770	700010	7103	00	000		TRA	.CRGT0,,P.CR		
001771	000065	000001		000		ZERO	.MFALT,1		
						INHIB	RESTORE		
					1516	*			IOS01615
001772	000000	000000		000	1517	REDSP	ZERO		IOS01620
001773	000000	000000		000	1518	NODSP	ZERO		IOS01625
					1519	*			IOS01630
001774	000200	2352	07	000	1520	TMOR1	LDA .RCCAC,DL		IOS01635
001775	600117	3153	00	000	1521	CANA	.SRQST,,P.SSA	MUST WE CLEAR CACHE	IOS01640
001776	002001	6002	00	010	1522	TZE	TMOR2	NO	IOS01645
001777	600117	6553	00	000	1523	ERSA	.SRQST,,P.SSA	YES, DO IT	IOS01650
002000	000000	0116	00	000	1524	CCAC			IOS01655
002001	001773	0542	00	010	1525	TMOR2	AOS	KEEP NO DISPATCH COUNT	IOS01660
002002	700100	2343	17	000	1526	SZN	.CRCMC,7,P.CR	IS PROC GOING OUT-OF-SERVICE	ANON1930
002003	001767	6042	00	010	1527	TMI	STOP	YES, PARK IT	ANON1940
		002004			1528	OCLIMB		NO, BACK TO INTERRUPT/DISPATCHER	ANON1950
002004	000000	7134	00	000		VFD	18/0,09/713,1/1,1/0,1/0,6/0		
002005	000000	010000		000		VFD	1/0,9/0,8/0,1/N,1/C,2/C,2/1,12/0		
					1529	*			ANON1960

INTERRUPT HANDLER - SCAN FOR LOST INTERRUPTS

					002006	1531	ITLST	NULL		
002006	000000	0116	00	000	1532		CCAC			IOS04AAM
002007	001750	3352	07	000	1533		LCA	MAXLC,DL		IOS04AAD
002010	700430	7553	00	000	1534		STA	.CRLIT,,P.CR	INITIALIZE .KLLIT	
002011	000000	2202	03	000	1535		LDX0	0,DU	START SCAN WITH IOM#	
					1536	*				
					002012	1537	ITLS2	NULL		
002012	300132	7233	00	000	1538		LXL3	.KLICL,,P.KL	CH# OF FIRST PAYLOAD CHANNEL	
002013	300132	2353	00	000	1539		LDA	.KLICL,,P.KL		
002014	000024	7352	00	000	1540		ALS	20	4 X CH# TO AU	
002015	000000	6212	01	000	1541		EAX1	0,AU		
002016	300133	0213	00	000	1542		ADLX1	.KLICN,,P.KL	TCX TO CHECK	
					1543	*				
					002017	1544	ITLS3	NULL	EXAMINE THIS CHANNEL	
002017	701203	7223	11	000	1545		LXL2	.CRI04,1,P.CR		
002020	003774	3622	03	000	1546		ANX2	.FCHNX,DU	ISOLATE LCX	
002021	701200	2243	11	000	1547		LDX4	.CRI01,1,P.CR		
002022	002125	6002	00	010	1548		TZE	ITLS4A	CHANNEL NOT BUSY	
002023	701201	2343	11	000	1549		SZN	.CRI02,1,P.CR	IS CONNECT TIME ZERO ?	
002024	002125	6002	00	010	1550		TZE	ITLS4A	YES,DONT NEED THE CHECK AS	
					1551	*			CONNECT IS BEING ISSUED NOW	
					1552	*				
002025	701200	7253	11	000	1553		LXL5	.CRI01,1,P.CR		
002026	000002	3052	03	000	1554		CANX5	2,DU	IS THIS A SUSPEND CHAN ?	
002027	002036	6002	00	010	1555		TZE	ITLS	NO	
002030	100011	7253	14	000	1556		LXL5	.WEFCM,4,P.IOQ	GET SECOND CMD FROM I/O ENTRY	
002031	000100	3052	03	000	1557		CANX5	=0100,DU	IS THIS A SPECIAL ITR TEST--BIT29	
002032	002036	6002	00	010	1558		TZE	ITLS	NO, USE REGULAR CHAN TIME OUT	
002033	002152	6262	00	010	1559		EAX6	ITRTM	30 SEC. TIMEOUT ON ITR COMMAND	
002034	001762	4706	07	000	1560		LDP	PO,,ISR,DL	DO LOST INT. CHECK WITH THIS ITR	
002035	002043	7102	00	010	1561		TRA	ITLSS		
					002036	1562	ITLS	NULL		
002036	006131	4746	07	000	1563		LDP	P,DDD,SD,DDD,DL	GET DDD SEG IN PO	
002037	701403	2253	12	000	1564		LDX5	.CRCT4,2,P.CR		
002040	400000	4707	15	000	1565		LDP	PO,0,5,P.DDD	LOAD CHANNEL MODULE DESC	
002041	000000	5076	00	000	1566		AWDX	0,,PO		EL8.
002042	000005	6262	00	000	1567		EAX6	5	GET LOST INTERRUPT VALUE FROM EP#	
					1568	*				
					002043	1569	ITLSS	NULL		
002043	200040	4133	00	000	1570		RSCR	32,,P,RMS	READ SCU CLOCK	
002044	701201	1363	11	000	1571		SBLQ	.CRI02,1,P.CR	TIME OF CONNECT	
002045	000004	7722	00	000	1572		QRL	4	TO 16-MICROSEC UNITS	IOS05460
002046	000000	1163	16	000	1573		CMPQ	0,6,PO	IS CHAN LOST TIME EXCEEDED ?	
002047	002142	6022	00	010	1574		TNC	ITLS4	CHANNEL CONNECT TIME IS OK	
					1575	*				
002050	700745	0543	00	000	1576		AOS	.CRTLS,,P.CR	COUNT UP IN .CRTLS	
002051	200040	4133	00	000	1577		RSCR	32,,P,RMS	RESTORE LOST INT. SURVEY	
002052	701201	7563	11	000	1578		STQ	.CRI02,1,P.CR	UPDATE CONNECT TIME(NO ACCT CHRGE	
002053	701003	7563	11	000	1579		STQ	.CRMB4,1,P.CR		
002054	000000	6242	14	000	1580		EAX4	0,4		

INTERRUPT HANDLER - SCAN FOR LOST INTERRUPTS

002055	002063	6052	00	010	1581	TPL	ITLS3A	NOT SPECIAL CMD	
002056	777771	1042	03	000	1582	CMPX4	-7,DU		
002057	002063	6042	00	010	1583	TMI	ITLS3A	NOT SPECIAL CMD	
002060	000000	2242	03	000	1584	LDX4	0,DU	MARK AS A SPECIAL CMD	
002061	510006	2352	03	000	1585	LDA	.FLOST,DU	SET LOST INTERRUPT STATUS	IOS04AAM
002062	002076	7102	00	010	1586	TRA	ITLS6		
					1587	*			
					1588	ITLS3A	NULL		
002063	100006	2353	14	000	1589	LDA	.WEICM,4,P.IOQ		
002064	770000	3752	07	000	1590	ANA	=0770C00,DL	PICK UP CHAN CMD	
002065	060000	1152	07	000	1591	CMPA	=0060000,DL	IS IT MULTI RECORD CMD ?	
002066	002073	6012	00	010	1592	TNZ	ITLS5	NO	
					1593	*			
002067	701002	2353	11	000	1594	LDA	.CRMB3,1,P.CR	SCW	
002070	200004	2353	01	000	1595	LDA	4,AU,P.RMS	GET CMD FROM CHAN.INSTR.WITHIN IO	
002071	000001	1352	07	000	1596	ITLS9	SBLA	1,DL	REDUCE RECORD COUNT
002072	002074	7102	00	010	1597	TRA	ITLS7		
					1598	*			
					1599	*			
					1600	ITLS5	NULL		
002073	100011	2353	14	000	1601	LDA	.WEFCM,4,P.IOQ		
					1602	ITLS7	NULL		
002074	000077	3752	07	000	1603	ANA	=077,DL	ISOLATE RECORD COUNT RESIDUE	
002075	510006	2752	03	000	1604	ORA	.FLOST,DU	SET LOST INTERRUPT STATUS	IOS04AAM
					1605	*			
					1606	ITLS6	NULL	STORE STATUS AND PUT INTERRUPT INTO QUEUE	
					1607	*	A	=LOST STATUS WORD	
					1608	*	X0	=IOM NUMBER	
					1609	*	X1	=TCX	
					1610	*	X2	=LCX	
					1611	*	X3	=CH#	
					1612	*	X4	=I/O ENTRY OFFSET (ZERO = SPECIAL)	
					1613	*	X7	=CONTROL PROCESSOR#	
					1614	*			
					1615	*			
002076	701002	2263	11	000	1616	LDX6	.CRMB3,1,P.CR		
002077	002142	6002	00	010	1617	TZE	ITLS4	NULL, FORGET IT	IOS04A5R
002100	400000	2362	03	000	1618	LDQ	=04C0000,DU	IMW BIT FOR CHAN ZERO	
002101	000000	7722	13	000	1619	QRL	0,3		
002102	002214	2252	10	010	1620	LDX5	MAP+12,0	TERM IMW INDEX	IOS04AAM
002103	002240	2562	15	010	1621	ORSQ	IMW,5	SET TERM BIT	IOS04AAM
002104	200000	2363	16	000	1622	LDQ	0,6,P.RMS	WAS STATUS RETURNED	IOS04AAM
002105	000003	6042	04	000	1623	TMI	3,IC	YES, LEAVE IT BE	IOS04AAM
002106	200000	7553	16	000	1624	STA	0,6,P.RMS	NO, SET LOST STATUS	IOS04AAM
002107	000044	7332	00	000	1625	LRS	36	MOVE STATUS WD#1 TO Q-REG	
002110	000000	6242	14	000	1626	EAX4	0,4	DATANET OR SPECIAL CMD ?	
002111	002142	6002	00	010	1627	TZE	ITLS4	YES	
					1628	*			
002112	701400	7253	12	000	1629	LXL5	.CRCT1,2,P.CR		
002113	040000	3052	03	000	1630	CANX5	.FPRCH,DU	IS THIS PRIMARY CHAN ?	

INTERRUPT HANDLER - SCAN FOR LOST INTERRUPTS

002114	002117	6002	00	010	1631	TZE	++3	YES
002115	003774	3652	03	000	1632	ANX5	.FCHNX,DU	ISOLATE LPCX
002116	000000	6222	15	000	1633	EAX2	0,5	
002117	100003	7263	14	000	1634	LXL6	.WEPID,4,P.IOQ	PICK UP KPX FROM I/O ENTRY
002120	100011	2353	14	000	1635	LDA	.WEFCM,4,P.IOQ	
002121	770000	3752	03	000	1636	ANA	=0770000,DU	ISOLATE DEV. CMD
002122	100011	7413	14	000	1637	STX1	.WEFCM,4,P.IOQ	SAVE TRUE CHANNEL INDEX
002123	100011	2553	14	000	1638	ORSA	.WEFCM,4,P.IOQ	COMPLETE CMD WORD
002124	002142	7102	00	010	1639	TRA	ITLS4	CHECK THE NEXT CHANNEL
					1640	*		
					002125	1641	ITLS4A NULL	GENERATE SPI FOR PRIMARY TAPE CHAN
002125	701400	2243	12	000	1642	LDX4	.CRCT1,2,P.CR	
002126	700000	3642	03	000	1643	ANX4	=0700000,DU	FIRST CHARACTER OF DEVICE TYPE
002127	100000	1042	03	000	1644	CMPX4	=0100000,DU	IS THIS A MT ?
002130	002142	6012	00	010	1645	TNZ	ITLS4	NO, CHECK NEXT CHAN
002131	701200	7243	11	000	1646	LXL4	.CRIO1,1,P.CR	
002132	010000	3042	03	000	1647	CANX4	.FXBAR,DU	IS THIS A CROSSBAR CHAN ?
002133	002136	6002	00	010	1648	TZE	GNSPL	NO,GENERATE SPI
002134	040000	3042	03	000	1649	CANX4	.FPRCH,DU	IS THIS A PRIMARY CHAN ON X-BAR ?
002135	002142	6002	00	010	1650	TZE	ITLS4	NO,CHECK NEXT CHAN
					1651	*		
					1652	*		
					002136	1653	GNSPL NULL	GENERATE SPI ON THIS CHANNEL
					1654	*		
					1655	*	X0 = IOM#	
					1656	*	X3 = CHAN#	
					1657	*		
002136	400000	2362	03	000	1658	LDQ	=0400000,DU	IMW BIT FOR CHAN ZERO
002137	000000	7722	13	000	1659	QRL	0,3	
002140	002234	2252	10	010	1660	LDX5	MAP+28,0	SPCL IMW INDEX IOS04AAM
002141	002240	2562	15	010	1661	ORSQ	IMW,5	SET SPCL BIT IOS04AAM
					1662	*		
					1663	*		
					002142	1664	ITLS4 NULL	INCREMENT CHAN#
002142	000001	0232	03	000	1665	ADLX3	1,DU	BUMP CH#
002143	000004	0212	03	000	1666	ADLX1	4,DU	BUMP TCX
002144	300132	1033	00	000	1667	CMPX3	.KLICL,,P.KL	ARE ALL CHANNEL CHECKED ?
002145	002017	6022	00	010	1668	TNC	ITLS3	NO, NEXT CHECK
					1669	*		
					002146	1670	ITL NULL	INCREMENT IOM COUNT
002146	000001	0202	03	000	1671	ADLX0	1,DU	
002147	300140	1003	00	000	1672	CMPX0	.KLNIC,,P.KL	ARE ALL IOM CHEKED ?
002150	002012	6022	00	010	1673	TNC	ITLS2	NO, NEXT IOM CHECK
002151	000666	7102	00	010	1674	TRA	GTCHN	YES
					1675	*		
					1676		INHIB OFF	
					1677	* I.H	CONSTANT SECTION	
					1678	*		
					1679	*		
002152	000007300000			000	1680	ITRTM	OCT 7300000	APPROX. 30 SEC

INTERRUPT HANDLER - SCAN FOR LOST INTERRUPTS

Address	Hex	Hex	Hex	Label	Mode	Value	Description	IO
002153	001750	000000000000	000	1681 MAXLC EQU 1000			COUNT FOR LOST INT. CHECK	
				1682 CHANO OCT 0			CHAN# BEING PROCESSED IN OCT.	
				1683 *				
002154		000000 000000	000	1684 BUSYF ZERO			IOM SYS FLT SW	
002155		000000 000000	000	1685 CHAN1 ZERO			TEMP STRG. FOR CHAN# CALC	
002156		000000 000000	000	1686 FLTIT ZERO			FAULT OCUREED FLAG	
002157		000000 000000	000	1687 SPCNT ZERO			MAX OVERRUN BEYOND QUEUE SIZE	
002160		000000 000000	000	1688 SPOVF ZERO			# OF TIMES GEUEU HAS OVERLYED	
002161		000000 000000	000	1689 PARCN ZERO			IOM MEMORY PARITY FLAG	
				1690 *				
002165	002162	000003710004	000	1691 MSG BSS 3			MESSAGE AREA FOR MISC EP6	
	002170			1692				
	002170			1693 REGW BSS 8				
				1694 *				
002200		777777 000004	000	1695 MAP ZERO -1,4			HDWE TO SOFTWARE IMW MAP	IOS01670
002201		777777 000014	000	1696 ZERO -1,12				IOS01675
002202		777777 000024	000	1697 ZERO -1,20				IOS01680
002203		777777 000034	000	1698 ZERO -1,28				IOS01685
002204		000000 777777	000	1699 ZERO 0,-1				IOS01690
	002205			1700 DUP 1,7				IOS01695
002205		777777 777777	000	1701 ZERO -1,-1				IOS01700
002206		777777 777777	000	ZERO -1,-1				
002207		777777 777777	000	ZERO -1,-1				
002210		777777 777777	000	ZERO -1,-1				
002211		777777 777777	000	ZERO -1,-1				
002212		777777 777777	000	ZERO -1,-1				
002213		777777 777777	000	ZERO -1,-1				
002214		000001 777777	000	1702 ZERO 1,-1				IOS01705
	002215			1703 DUP 1,7				IOS01710
002215		777777 777777	000	1704 ZERO -1,-1				IOS01715
002216		777777 777777	000	ZERO -1,-1				
002217		777777 777777	000	ZERO -1,-1				
002220		777777 777777	000	ZERO -1,-1				
002221		777777 777777	000	ZERO -1,-1				
002222		777777 777777	000	ZERO -1,-1				
002223		777777 777777	000	ZERO -1,-1				
002224		000002 777777	000	1705 ZERO 2,-1				IOS01720
	002225			1706 DUP 1,7				IOS01725
002225		777777 777777	000	1707 ZERO -1,-1				IOS01730
002226		777777 777777	000	ZERO -1,-1				
002227		777777 777777	000	ZERO -1,-1				
002230		777777 777777	000	ZERO -1,-1				
002231		777777 777777	000	ZERO -1,-1				
002232		777777 777777	000	ZERO -1,-1				
002233		777777 777777	000	ZERO -1,-1				
002234		000003 777777	000	1708 ZERO 3,-1				IOS01735
002235		777777 777777	000	1709 ZERO -1,-1				IOS01740
002236		777777 777777	000	1710 ZERO -1,-1				IOS01745
002237		777777 777777	000	1711 ZERO -1,-1				IOS01750

I/O QUE SEGMENT SIZE MANAGER

					1717		INHIB	ON		EL8.
002260	002301	6042	00	010	1718	PAGER	TMI	PGMOR	PAGE REQUEST IS NEEDED	IOS04975
002261	010000	3002	03	000	1719		CANXO	.FBT5,DU	IS PAGE RLSE ACCTIVE	IOS04980
002262	001717	6012	00	010	1720		TNZ	ITLST1	YES, LET IT HAPPEN	IOS04985
					1721	*				IOS04990
					1722	*				IOS04995
					1723	*				IOS05000
002263	100000	2213	00	000	1724		LDX1	.WEPG1,,P.IOQ	# OF PAGES IN USE	IOS05005
002264	100037	7223	11	000	1725		LXL2	.WOPEN-1,1,P.IOQ	GET LAST PAGE ENTRY	IOS05010
002265	002272	6042	00	010	1726		TMI	PAGE2	ALREADY INACTIVE	IOS05015
002266	010000	2602	03	000	1727		ORXO	.FBT5,DU		IOS05020
002267	100003	7403	00	000	1728		STXO	.WEPAD,,P.IOQ	SET REQUEST ACTIVE	IOS05025
002270	400000	2352	07	000	1729		LDA	.FBT18,DL		IOS05030
002271	100037	7553	11	000	1730		STA	.WOPEN-1,1,P.IOQ	MARK PAGE INACTIVE	IOS05035
002272	777777	6352	11	000	1731	PAGE2	EAA	-1,1		IOS05040
002273	000012	7352	00	000	1732		ALS	10	GET PAGE ADDRESS	IOS05045
002274	100004	2203	01	000	1733		LDXO	.WEECT,AU,P.IOQ	IS PAGE FREE	IOS05050
002275	001717	6012	00	010	1734		TNZ	ITLST1	NO, WAIT	IOS05055
002276	002336	6716	00	010	1735		LDD	P1,RLVEC	.MIOS2,2 MESSAGE	IOS05060
002277	000000	2362	07	000	1736		LDQ	0,DL	NO ENABLE FLAG	IOS05065
002300	002311	7102	00	010	1737		TRA	PGCOM		IOS05070
					1738	*				IOS05075
					1739	*				IOS05080
					1740	*				IOS05085
002301	100000	3002	03	000	1741	PGMOR	CANXO	.FBT2,DU	IS PAGE REQUEST ACTIVE	IOS05090
002302	001717	6012	00	010	1742		TNZ	ITLST1	YES, LET IT HAPPEN	IOS05095
002303	100053	2343	00	000	1743		SZN	.WOPEN+NGPAG-1,,P.IOQ	ARE ALL PAGES USED	IOS05100
002304	001717	6012	00	010	1744		TNZ	ITLST1	YES, CANT DO MORE	IOS05105
002305	100000	2602	03	000	1745		ORXO	.FBT2,DU	NO, SET IT ACTIVE	IOS05110
002306	100003	7403	00	000	1746		STXO	.WEPAD,,P.IOQ		IOS05115
002307	002330	6716	00	010	1747		LDD	P1,RQVEC	.MIOS2,1 MESSAGE	IOS05120
002310	770000	2362	07	000	1748		LDQ	=0770C00,DL	SET MAX URGENCY	IOS05125
002311	001717	6252	00	010	1749	PGCOM	EAX5	ITLST1	SET RETURN	EL8.
002312	002315	7102	00	010	1750		TRA	MISA7	MAKE QUE ENTRY	EL8.
					1751	*				EL8.
					1752	*				EL8.
					1753		INHIB	SAVE,ON		EL8.
002313	000000	6362	00	000	1754	MISC7	EAQ	0		EL8.
002314	001704	6716	00	010	1755		LDD	P1,POPVEC		EL8.
					1756	*				EL8.
002315	001703	7726	00	010	1757	MISA7	LDWS	IHWS	SET IHLR WSR 4-7	IOS04AAM
002316	000001	6212	00	000	1758		EAX1	.POQ		EL8.
		002317			1759		.CALL	.MMISC,7		EL8.
							INHIB	SAVE,ON		
002317	000003	6306	04	2322			EPPRO	*+3,\$		
002320	700002	7103	00	000			TRA	.CRCAL,,P.CR		
002321	000372	000007	000				ZERO	.MMISC,7		
							INHIB	RESTORE		
002322	000000	0112	00	000	1760		NOP			EL8.
002323	006063	4726	07	000	1761		LDP	P.RMS,SD,RMS,DL		EL8.

I/O QUE SEGMENT SIZE MANAGER

002324	006013 4716 07	000	1762	LDP	P.IOQ,SD.IOQ,DL		EL8.
002325	001761 4716 07	000	1763	LDP	P.IOQ,..CTYP,DL		EL8.
002326	000000 7102 15	000	1764	TRA	0,5	RETURN	EL8.
			1765	INHIB	RESTORE		EL8.
			1766 *				IOS05170
002327	000000011207	000					
002330	000002750640	000	1767	RQVEC EVEC	.ISR,RQPAGE,3,(R,W)	VECTOR FOR .MMISC	IOS05175
002331	002332001762	010					
002332	321001000000	000	1768	RQPAGE VFD	9/.MICS2,9/1,18/0	POQ ENTRY	IOS05180
002333	000000000000	000	1769	OCT	0,0		IOS05185
002334	000000000000	000					
002335	000000011207	000					
002336	000002750640	000	1770	RLVEC EVEC	.ISR,RLPAGE,3,(R,W)	VECTOR FOR .MMISC	IOS05190
002337	002340001762	010					
002340	321002000000	000	1771	RLPAGE VFD	9/.MICS2,9/2,18/0	POQ ENTRY	IOS05195

INTERRUPT HANDLER - ACTIVATE/DEACTIVATE FUNCTION

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002341 1775 * * * * *
1776 CHSUB NULL COMMON CHN-MOD SUB-RTN FOR DEACTIVATE/ACTIVATE FUNCTION
1777 * CALLING SEQUENCE
1778 * LDXD .CR CT,,P.CR
1779 * EPPR P5,**2,IC
1780 * TRA 0,0,P5
1781 *
1782 * Q-REG STATUS WDC#1
1783 * X0
1784 * X1 TCX
1785 * X2 LCX
1786 * X3 PATIAL STATUS
1787 * X4 I/O ENTRY OFFSET
1788 * X5
1789 * X6 POP'S KPX
1790 * X7 CONTROL PROCESSOR#
1791 * P0 D/C
1792 * P1 I/O ENTRY POOL SEG (T=0)
1793 * P2 D/C
1794 * P3 SSA DATA OF I/O ENTRY (T=2)
1795 * P4 IOS ISR
1796 * P5 RETURN DESC
1797 * P6 POP'S SSA DATA
1798 * P7 P.CR
1799 *
1800 *
1801 * * * * *
002341 200000 3162 03 000 1802 CANQ =020000,DU IS THE STATUS POWER OFF ?
002342 002376 6012 00 010 1803 TNZ EXIT1 YES, TAKE ERROR EXIT
1804 *
002343 170000 3632 03 000 1805 ANX3 =0170000,DU ISOLATE MAJOR STATUS
002344 701200 2353 11 000 1806 LDA .CRI01,1,P.CR
002345 100000 3152 07 000 1807 CANA =0100C00,DL IS THIS PSI CHAN ?
002346 002357 6002 00 010 1808 TZE CKCPI NO, MAKE CPI CHECKS
002347 100000 3032 03 000 1809 CANX3 =0100C00,DU PSI MAJOR STATUS OF "1-"
002350 002361 6002 00 010 1810 TZE TEST3 NO, GO TO NEXT TEST
002351 150000 1032 03 000 1811 CMPX3 =0150C00,DU IS MAJOR STATUS "15" ?
002352 002361 6002 00 010 1812 TZE TEST3 YES, GO TO NEXT TEST
002353 160000 3632 03 000 1813 ANX3 =0160C00,DU
002354 120000 1032 03 000 1814 CMPX3 =0120C00,DU MAJOR STATUS "12"OR"13"
002355 002376 6012 00 010 1815 TNZ EXIT1 NO,MUST BE 10,11,14,16,17 ERROR
002356 002361 7102 00 010 1816 TRA TEST3 YES, GO TO NEXT TEST
1817 *
002357 060000 1032 03 000 1818 CKCPI NULL CHECK CPI CHANNEL FOR STATUS OF 6 OR ABOVE
002360 002376 6032 00 010 1819 CMPX3 =0060C00,DU IS MAJOR STATUS 6 OR LARGER ?
1820 TRC EXIT1 YES, TAKE ERROR EXIT
1821 *
002361 000000 6232 06 000 1822 TEST3 EAX3 0,QL GET LOWER HALF OF STATUS WORD
002362 700000 3632 03 000 1823 ANX3 =0700C00,DU CHANNEL STATUS FIELD
002363 400000 1032 03 000 1824 CMPX3 =0400000,DU IS IT INCOMPLETE INSTR.SEQ.?

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INTERRUPT HANDLER - ACTIVATE/DEACTIVATE FUNCTION

002364	002367	6012	00	010	1825	TNZ	++3	NO
002365	100000	3152	07	000	1826	CANA	=01C0C00,DL	IS THIS A PSI CHANNEL
002366	002376	6012	00	010	1827	TNZ	EXIT1	YES TAKE ERROR EXIT
					1828	*		
002367	600000	3632	03	000	1829	ANX3	=0600C00,DU	IS IT IOM 06 OR 07 PARITY ERR ?
002370	600000	1032	03	000	1830	CMPX3	=0600C00,DU	
002371	002376	6002	00	010	1831	TZE	EXIT1	YES TAKE ERROR EXIT
					1832	*		
002372	000000	6232	06	000	1833	EAX3	0,QL	LOWER HALF OF STATUS WD
002373	060000	3632	03	000	1834	ANX3	=0060C00,DU	IOM CENTRAL STATUS (PARTIAL)
002374	060000	1032	03	000	1835	CMPX3	=0060C00,DU	IS THIS AN IOM CP OR PARITY ERR
002375	400000	6013	00	000	1836	TNZ	0,,P4	NO, TAKE ZERC EXIT
					1837	*		
	002376				1838	EXIT1	NULL	AN ERROR CONDITION HAS BEEN FOUND THAT REQUIRES THE
					1839	*		CHANNEL STOP BIT TO BE SET, BIT17 OF .WEICM WITHIN
					1840	*		I/O ENTRY BE SET AND THE TCX BE STORED IN .WEICM.
					1841	*		
002376	002000	2352	07	000	1842	LDA	.FGPOV,DL	
002377	100004	3753	14	000	1843	ANA	.WESCT,4,P.IOQ	IS GEPR OVERRIDE SET ?
002400	400000	6013	00	000	1844	TNZ	0,,P4	YES,TAKE ZERC EXIT
002401	701203	7233	11	000	1845	LXL3	.CRI04,1,P.CR	
002402	003774	3632	03	000	1846	ANX3	.FCHNX,DU	ISOLATE LCX
002403	000001	2352	07	000	1847	LDA	1,DL	
002404	701400	2553	13	000	1848	ORSA	.CRCT1,3,P.CR	TURN ON CHAN.STOP BIT
002405	100011	2353	14	000	1849	LDA	.WEFCM,4,P.IOQ	GET CMD
002406	770000	3752	03	000	1850	ANA	=0770C00,DU	ISOLATE CMD
002407	000001	2752	03	000	1851	ORA	1,DU	FORCE BIT17 ON
002410	100011	7413	14	000	1852	STX1	.WEFCM,4,P.IOQ	SAVE TCX
002411	100011	2553	14	000	1853	ORSA	.WEFCM,4,P.IOQ	PUT CMD BACK WITH BIT 17
002412	400001	7103	00	000	1854	TRA	1,,P4	TAKE ERROR EXIT
					1855	*		
					1856	*		
					1857	*		
							END OF CHSUB	

FORMAT ERROR ACCOUNTING RECORD

1859 *
 1860 * THIS SUBROUTINE FORMATS THE LOGICAL RECORD (TYPE3) FOR ACCOUNT
 1861 * ALL NON-NORMAL STATUSES ARE RECORDED
 1862 * WORD-6, TIME OF INTERRUPT IS ALREADY STORED
 1863 *

1864 * CALLING SEQUENCE

1865 *
 1866 * EPPR P4, **2 OR **3, \$
 1867 * TRA 0, 5, P5
 1868 *

1869 * REGISTERS

1870 * X0 STATUS WD#1
 1871 * X1 TYPE OF INTERRUPT
 1872 * X2 LCX
 1873 * X3
 1874 * X4 I/O ENTRY OFFSET
 1875 * X5 FMTAR ADDR
 1876 * X6 KPX OF POP
 1877 * X7 CONTROL PROCESSOR#
 1878 *

1879 * P0 P.PAT
 1880 * P1 P.IOQ
 1881 * P2 P.RMS
 1882 * P3 P.KL
 1883 * P4 RETURN DESCRIPTOR
 1884 * P5 ISR OF IOS
 1885 * P6 P.SSA OF POP
 1886 * P7 P.CR
 1887 *

002413	000000000000	000	1888	SAVW	OOCT	0			
002414	000000000000	000	1889	WSAV	EOCT	0		WS REG. SAVE AREA FOR POP	IOS03310
002415	000000000000	000	1890		OCT	0			
			1891	*					
002416	000000000000	000	1892	BUFFLG	OCT	0		TYPE 3 ACCOUNTING FLAG	
			1893	*					
			1894	FMTAR	NULL				
002417	002421	7102 00 010	1895		TRA	**2			
002420	002652	7102 00 010	1896		TRA	BUFEX		EXTEND STATUS CALL	
002421	002704	4502 00 010	1897		STZ	LENG		CLEAR FLAG	
002422	002641	7412 00 010	1898		STX1	RSTX1		SAVE TRUE CHAN INDEX	
002423	002642	7402 00 010	1899		STX0	RSTX0		SAVE INT TYPE	
			1900	EXTST	NULL				
002424	002706	4546 00 010	1901		STP	P4, STF2		SAVE RETURN REG.	
			1902		INHIB	ON			
002425	100025	7727 14 000	1903		LDWS	.WEEND+1, 4, P.IOQ		SET WSR 4-7	EL8.
002426	100010	2363 14 000	1904		LDQ	.WEEP1, 4, P.IOQ			
002427	002724	7562 00 010	1905		STQ	EBUFF+10			
002430	700516	2353 00 000	1906		LDA	.CRSID, P.CR			
002431	002713	7552 00 010	1907		STA	EBUFF+1		SET SYS ID	
002432	700104	2373 00 000	1908		LDAQ	.CRDAT, P.CR			

FORMAT ERROR ACCOUNTING RECORD

002433	002714	7552	00	010	1909	STA	EBUFF+2	SET DATE
002434	002717	7562	00	010	1910	STQ	EBUFF+5	STORE CURRENT TIME FROM START UP
002435	002641	2212	00	010	1911	LDX1	RSTX1	RESTORE X1
002436	701201	2353	11	000	1912	LDA	.CRIO2,1,P.CR	
002437	002721	7552	00	010	1913	STA	EBUFF+7	SET CONNECT TIME
002440	006144	4706	07	000	1914	LDP	PO,SD,SNE,DL	LOAD SNUM TABLE SEGMENT DESC.
002441	000000	2353	16	000	1915	LDA	0,6,PC	
002442	000077	3152	07	000	1916	CANA	=077,DL	IS THIS SYSTEM ?
002443	002447	6002	00	010	1917	TZE	SYSPG	YES,USE PROCESS#
					1918 *			
002444	600001	2363	00	000	1919	LDQ	.SACT,,P.SSA	GET ACTIVITY #
002445	777777	3762	03	000	1920	ANQ	-1,DU	ISOLATE BCD ACT#
002446	002451	7102	00	010	1921	TRA	ST034	GO TO STORE WORD 3,4
					1922 *			
	002447				1923	SYSPG	NULL	
002447	000000	6352	16	000	1924	EAA	0,6	USE PROCESS# FOR SYSTEM
002450	000000	2362	03	000	1925	LDQ	0,DU	ACTIVITY# FOR SYSTEM
					1926 *			
	002451				1927	ST034	NULL	
002451	002715	7552	00	010	1928	STA	EBUFF+3	SET SNUMB/PROC #
002452	002716	7562	00	010	1929	STQ	EBUFF+4	SET ACTIVITY#/ZERO
					1930 *			
002453	100004	2353	14	000	1931	LDA	.WESCT,4,P.IOQ	
002454	000117	3752	00	010	1932	ANA	.FSCT2	ISOLATE SCT ADDR
002455	700000	2363	01	000	1933	LDQ	0,AU,P.CR	GET DEV TYPE
002456	770000	3762	03	000	1934	ANQ	.FDVTP,DU	ISOLATE IT
002457	000022	7722	00	000	1935	QRL	18	POSITION IN 18-23
002460	002716	2562	00	010	1936	ORSQ	EBUFF+4	SET DEV TYPE
002461	002000	3752	07	000	1937	ANA	=0200C,DL	GEPR OVERRIDE FLAG
002462	002716	2552	00	010	1938	ORSA	EBUFF+4	BIT25
					1939 *			
002463	100005	2353	14	000	1940	LDA	.WEPEP,4,P.IOQ	SPECIFY OVERRIDE FLAGS
002464	001700	3752	07	000	1941	ANA	=0170C,DL	BIT 26,27
002465	002716	2552	00	010	1942	ORSA	EBUFF+4	
					1943 *			
002466	701400	2353	12	000	1944	LDA	.CRCT1,2,P.CR	
002467	010000	3152	07	000	1945	CANA	.FMLTD,DL	IS THIS MULTI DEVICE CHAN
002470	002474	6012	00	010	1946	TNZ	MDEVC	YES
					1947 *			
002471	701202	2353	11	000	1948	LDA	.CRIO3,1,P.CR	SINGLE DEVICE CH# OF CONNECTS
002472	701203	2363	11	000	1949	LDQ	.CRIO4,1,P.CR	# OF ERR/THRESHOLD COUNT
002473	002500	7102	00	010	1950	TRA	ST089	
					1951 *			
	002474				1952	MDEVC	NULL	
002474	100004	2353	14	000	1953	LDA	.WESCT,4,P.IOQ	GET SCT ADDR
002475	017774	3752	03	000	1954	ANA	.FSCT1,DU	ISOLATE IT
002476	700003	2363	01	000	1955	LDQ	3,AU,P.CR	# OF ERR/THRESHOLD COUNT
002477	700002	2353	01	000	1956	LDA	2,AU,P.CR	# OF CONNECT
					1957 *			
	002500				1958	ST089	NULL	

FORMAT ERROR ACCOUNTING RECORD

Record #	Device #	Count	Time	Year	Op Code	Op Name	Op Param	Op Desc	IO Suffix
002500	000022	7722	00	000	1959	QRL	18		IOS06560
002501	002722	7552	00	010	1960	STA	EBUFF+8	# OF CONNECTS	
002502	002723	7562	00	010	1961	STQ	EBUFF+9	# OF ERR/THRESHOLD COUNT	
				1962					
				1963	*				
002503	100011	2353	14	000	1964	LDA	.WEFCM,4,P.I0Q	SEC.CMD IF DUAL	
002504	011342	3752	04	14046	1965	ANA	=0770C00770077,\$	CH MD,IOM CMD,REC CNT	
002505	002725	7552	00	010	1966	STA	EBUFF+11		
				1967	*				
				1968	*	INSERT	CHAN#, DEV# ,I/O	CONTROLLER#	
				1969	*				
002506	100004	2213	14	000	1970	LDX1	.WESCT,4,P.I0Q		
002507	017774	3612	03	000	1971	ANX1	.FSCT1,DU	ISOLATE SCT OFFSET	
002510	700000	2363	11	000	1972	LDQ	0,1,P.CR		
002511	010000	3162	07	000	1973	CANQ	.FMLTD,DL	IS THIS SINGLE DEV CHAN ?	
002512	002515	6002	00	010	1974	TZE	SGDEV	YES, DEVICE# IS ZERO	
002513	007700	3762	03	000	1975	ANQ	.FDVNO,DU	ISOLATE DEV#	
002514	002516	7102	00	010	1976	TRA	ORDEV	GO OR IN DEV#	
				1977	*				
				1978		SGDEV	NULL		
002515	000000	2362	03	000	1979	LDQ	0,DU	DEV# ZERO FOR SINGLE DEV	
				1980	*				
				1981		ORDEV	NULL		
002516	002725	2562	00	010	1982	ORSQ	EBUFF+11	SET IN BIT 6-11	
002517	701400	2353	12	000	1983	LDA	.CRCT1,2,P.CR	GET CHAN SCT	
002520	003077	3752	03	000	1984	ANA	.FIOCN+.FCHNO,DU	DEV AND CHAN #	
002521	000011	7712	00	000	1985	ARL	9		
002522	000000	6362	01	000	1986	EAQ	0,AU	I/O CONTROLLER # IN QU	
002523	002725	2552	00	010	1987	ORSA	EBUFF+11	IN BIT 17 & 18	
				1988	*				
002524	000011	7352	00	000	1989	ALS	9		
002525	000077	3752	03	000	1990	ANA	.FCHNO,DU	CHANNEL# IN 12-17	
002526	000014	7712	00	000	1991	ARL	12	IN BIT 24-29	
002527	002725	2552	00	010	1992	ORSA	EBUFF+11		
				1993	*				
002530	600014	2373	00	000	1994	LDAQ	.SUID,,P.SSA	GET USER ID	
002531	002730	7552	00	010	1995	STA	EBUFF+14	SET IT	
002532	002731	7562	00	010	1996	STQ	EBUFF+15		
				1997	*				
002533	100005	2233	14	000	1998	LDX3	.WEPEP,4,P.I0Q	PAT POINTER OFFSET	
002534	002546	6002	00	010	1999	TZE	ACTPT	NONE,USE ACCT PAT	
002535	006204	4706	07	000	2000	LDP	PO,SD.PSH,DL		
002536	000002	6707	00	000	2001	LDD	P.PAT,PH.PAT,,PO	SET PAT DESC.	
				2002	*				
002537	000000	2233	13	000	2003	LDX3	0,3,P.PAT	GET PAT OFFSET	
002540	037777	3632	03	000	2004	ANX3	=037777,DU	FILL FLAGS	
002541	037777	1032	03	000	2005	CMPX3	.FADJ,DU	IS IT SPECIAL	IOS02460
002542	002550	6012	00	010	2006	TNZ	PATBD	NO	IOS02470
002543	100005	2233	14	000	2007	LDX3	.WEPEP,4,P.I0Q	RESTORE POINTER	EL7.
002544	000003	6232	13	000	2008	EAX3	.OFFS,3	YES, ADJUST POINTER	IOS02480

FORMAT ERROR ACCOUNTING RECORD

002615	002716	2552	00	010	2059	ORSA	EBUFF+4	SO IDENTIFY DEVICE	LCC01410
002616	002630	7102	00	010	2060	TRA	BUFST		LCC01420
					2061 *				
					002617				
					2062	MASST	NULL		
					2063 *	LDX1	0,3,P.PAT	GET CATALOG SCT OFFSET	
					2064 *	ANX1	.FSCT1,DU		
002617	100006	2353	14	000	2065	LDA	.WEICM,4,P.IOQ	SET SEEK ADDR.	
002620	002726	7552	00	010	2066	STA	EBUFF+12		
					2067 *				
002621	000002	2363	13	000	2068	LDQ	2,3,P.PAT	FLAGS AND CATA SEEK ADDR.	
002622	000400	3162	03	000	2069	CANQ	.FMPMF,DU	IS THIS PERM FILE ?	
002623	002630	6002	00	010	2070	TZE	BUFST	NO, BUFFER IS SET	
					2071 *				
002624	377777	3762	07	000	2072	ANQ	=0377777,DL	ISOLATE CATALOG SEEK ADDR	
002625	002727	7562	00	010	2073	STQ	EBUFF+13	CATALOG SEEK ADDR	
002626	200000	6362	00	000	2074	EAQ	.FMEFF	SET ERR OCCURRED FLAG	
002627	000000	2563	13	000	2075	ORSQ	0,3,P.PAT	IN PAT FOR FILSYS	
					2076 *				
					002630				
002630	002712	6212	00	010	2077	BUFST	NULL		
002631	001703	7726	00	010	2078	EAX1	EBUFF	ADDR OF L.R.	
					2079	LDWS	IHWS	SET IHLR WSR 4-7	IOS04AAM
					2080	INHIB	OFF		
002632	300044	2261	17	000	2081	LDX6	.KLPRG,7,P.KL	SET KPX	ANON1280
002633	000055	6724	04	2710	2082	LDD	P2,BUFVEC,\$	SET ACCT DATA ON P2	
					2083 *				EL8.
002634	006667	7050	00	010	2084	TSX5	ACTFL	TAKE ACCT	
					2085 *				
002635	002704	2350	00	010	2086	LDA	LENG	FLAG SET	
002636	002640	6000	00	010	2087	TZE	++2		
002637	002712	7550	00	010	2088	STA	EBUFF	RESTOR EBUFF	
002640	100003	7261	14	000	2089	LXL6	.WEPID,4,P.IOQ		
002641	000000	2210	03	000	2090	RSTX1	LDX1	RESTOR X1=TCX	
002642	000000	2200	03	000	2091	RSTX0	LDX0	RELOAD X0	
002643	100010	2361	14	000	2092	LDQ	.WEEP1,4,P.IOQ	SET SRW1	
002644	000000	6230	02	000	2093	EAX3	0,QU		
002645	370000	3630	03	000	2094	ANX3	=0370000,DU	RESTORE MAJ. STATUS AND POWER BIT	
002646	001762	4754	07	000	2095	LDP	P5,.ISR,DL		
002647	006063	4724	07	000	2096	LDP	P2,SD,RMS,DL	RELOAD RMS DESC	
002650	002706	4744	00	010	2097	LDP	P4,STF2	RESTORE P4 AS A RETURN DESC	
					2098 *				
					2099 *				
002651	400000	7101	00	000	2100	RET	TRA	0,,P4	RETURN FOR EXTEND STATUS
					2101 *				
					2102 *				
					2103 *				
					002652				
002652	002641	7410	00	010	2104	BUFEX	NULL	ERROR ACCT FOR EXTEND STATUS	
002653	002642	7400	00	010	2105	STX1	RSTX1		
002654	477777	7211	00	000	2106	STX0	RSTX0	STORE X0	
002655	002660	6010	00	010	2107	LXL1	-1,,P4	LOAD # OF WD OF EXTEND STATUS	
					2108	TNZ	++3		

FORMAT ERROR ACCOUNTING RECORD

002656	002641	2210	00	010	2109	ILWC	LDX1	RSTX1		WRD CNT OF ZERO NOT LEG
002657	002424	7100	00	010	2110		TRA	EXTST		RETURN FOR NORMAL PROCCESsing
002660	000007	1010	03	000	2111		CMPX1	7,DU		
002661	002656	6030	00	010	2112		TRC	ILWC		# WRDS MUST BE 0<N<7
002662	002712	2350	00	010	2113		LDA	EBUFF		ORIGINAL LENGTH/TYPE
002663	002704	7550	00	010	2114		STA	LENG		SAVE
002664	477777	2231	00	000	2115		LDX3	-1,P4		LOAD EXTBUF ADDR
002665	002705	7444	00	010	2116		SAR	P4,STP1		STORE POINTER REG
002666	400000	5074	00	000	2117		AWDX	0,P4	CLEAR AR4	EL8.
002667	000000	6360	11	000	2118		EAQ	0,1		# OF WRDS OF EXTEND STATUS
002670	000017	0210	03	000	2119		ADLX1	15,DU		RECORD LENGTH
002671	002712	7410	00	010	2120		STX1	EBUFF		NEW LENGTH SET
002672	002732	6210	00	010	2121		EAX1	EBUFF+16		START OF EXTEND STATUS AREA
002673	400000	2351	13	000	2122	LOOP	LDA	0,3,P4		MOVE EXT STATUS
002674	000000	7550	11	000	2123		STA	0,1		TO BUFFER
002675	000001	0230	03	000	2124		ADLX3	1,DU		
002676	000001	0210	03	000	2125		ADLX1	1,DU		
002677	000001	1360	03	000	2126		SBLQ	1,DU		
					2127	*				
002700	002673	6010	00	010	2128		TNZ	LOOP		IS ALL EXT STATUS MOVED ?
002701	002641	2210	00	010	2129		LDX1	RSTX1		YES
002702	002705	7644	00	010	2130		LAR	P4,STP1		RELOAD AR4
002703	002424	7100	00	010	2131		TRA	EXTST		
					2132	*				
					2133	*				
002704	000000000000		000	000	2134	LENG	OCT	0		
002705	000000000000		000	000	2135	STP1	OCT	0		
002706	000000000000		000	000	2136	STP2	OCT	0		SAVE AREA FOR RETURN POINTER REG
					2137	*				
002707	000000011007		000	000	2138					
	002710				2139	BUFVEC	VEC	.ISR,EBUFF,26,(R,W)		
002710	000031750640		000	000	2139					
002711	002712001762		010	010						
002712	000014000003		000	000	2140	EBUFF	VFD	018/14,018/3		LENGTH/TYPE
	002713				2141	BSS		25		L.R. DATA
					2142	*				

FORMAT ERROR ACCOUNTING RECORD

					2144 *	INSTRUMENTATION CODE - PUT TYPE 27 RECORD ON ACCTG FILE		TEST7375
					2145 *	ENABLED BY PATCH '62 OCTAL 0'		TEST7380
					2146 *			TEST7385
					2147 *	WORD+0 3,27		TEST7390
					2148 *	+1 PAT PTR, PROG #		TEST7395
					2149 *	+2 SCT PTR, FILE CODE		TEST7400
					2150 *	+3 SEEK ADDRESS / COMMAND		TEST7405
					2151 *			TEST7410
002744	000000011007			000				
002745	014020024000			000	2152 XWSR	OOCT 014020024000	WSR 4-7 VALUES	TEST7415
002746	000003750640			000	2153 XVEC	EVEC .ISR,XBUF,4,(R,W)		TEST7420
002747	002750001762			010				
002750	000003 000033			000	2154 XBUF	ZERO 3,27	RCW	TEST7425
	002751				2155	BSS 3	DATA BLOCK	TEST7430
					2156 *			TEST7435
002754	100004 2201 14			000	2157 XTST	LDX0 .WESCT,4,P.IOQ	PAT PTR	11FW0480
002755	037774 3600 03			000	2158	ANX0 .FPSCT,DU		11FW0490
002756	700000 2341 10			000	2159	SZN 0,0,P.CR	IS DEVICE MASS STORE	11FW0500
002757	003012 6050 00			010	2160	TPL TSTRT	NO	11FW0510
002760	100005 2251 14			000	2161	LDX5 .WEPEP,4,P.IOQ	PAT PTR	11FW0520
002761	003012 6000 00			010	2162	TZE TSTRT	NULL	11FW0530
					2163	INHIB ON		11FW0540
					2164	.SHUT .CRACF,,P.CR		11FW0550
002765	002752 7402 00			010	2165	STX0 XBUF+2	SET SCT PTR	11FW0560
002766	002751 7452 00			010	2166	STX5 XBUF+1	& PAT PTR	11FW0570
002767	100006 2353 14			000	2167	LDA .WEICM,4,P.IOQ	SEEK ADDRESS	11FW0580
002770	002753 7552 00			010	2168	STA XBUF+3		11FW0590
002771	700003 2353 14			000	2169	LDA .WEPID,4,P.CR	PROG #	11FW0600
002772	002751 7512 07			010	2170	STCA XBUF+1,07		11FW0610
002773	002745 7526 00			010	2171	STWS XWSR	SAVE WSR 4-7	11FW0620
002774	000002 7352 00			000	2172	ALS 2	KPID INEX	11FW0630
002775	006024 4706 07			000	2173	LDP PO,SD,PID,DL		11FW0640
002776	000001 7727 05			000	2174	LDWS 1,AL,PO	LOAD WSR 4-7	ITP.1980
002777	006204 4726 07			000	2175	LDP A.PSH,SD,PSH,DL		11FW0660
003000	200002 6707 00			000	2176	LDD P.PAT,PH,PAT,,A.PSH		11FW0670
003001	000000 2353 10			000	2177	LDA 0,0,P.PAT	GET FILE CODE	11FW0680
003002	002752 7512 03			010	2178	STCA XBUF+2,03		11FW0690
003003	200000 6707 00			000	2179	LDD P.PAT,PH,SSA,,A.PSH		11FW0700
003004	200001 2353 00			000	2180	LDA .SACT,,A.PSH	ACTY #	11FW0710
003005	000014 7352 00			000	2181	ALS 12		11FW0720
003006	002752 7512 04			010	2182	STCA XBUF+2,04		11FW0730
003007	002745 7726 00			010	2183	LDWS XWSR	RELOAD WSR 4-7	11FW0740
003010	002746 6726 00			010	2184	LDD P2,XVEC		11FW0750
003011	006672 7052 00			010	2185	TSX5 ACTFI	WRITE ACCOUNTING RECORD	11FW0760
					2186	INHIB OFF		11FW0770
					2187 *	TRA TSTRT		TEST7585
					2188 *	END OF INSTRUMENTATION CODE		TEST7590

EXIT 0 = STATUS RETURN ACTION

2190 * THIS ROUTINE RETURNS STATUS TO THE PROCESS, UNLINKS THE I/O
2191 * ENTRY, AND CHECKS FOR COURTESY CALL.
2192 *
2193 * IF A COURTESY CALL IS REQUESTED, THE APPROPRIATE BIT IS SET IN
2194 * THE STATE WORD, THE I/O ENTRY IS LINKED INTO THE COURTESY CALL QUEUE,
2195 * AND THE "IN TRANSMISSION" COUNT IS DECREMENTED.
2196 *
2197 * IF A COURTESY CALL IS NOT REQUESTED, THE I/O ENTRY IS SET FREE,
2198 * AND BOTH THE "LINKED" AND "IN TRANSMISSION" COUNTS ARE DECREMENTED.
2199 *
2200 * ROADBLOCK, RELINQUISH, AND ALARM ARE BROKEN AS APPROPRIATE. IF
2201 * THE STATE OF THE PROCESS HAS CHANGED, THE PROCESS IS ENABLED. THE
2202 * "I/O COMPLETE SINCE LAST LINK" BIT IS SET IN THE STATE WORD, AND THE
2203 * ROUTINE RETURNS TO THE CALLER.
2204 *
2205 *
2206 * THE STATUS RETURN ROUTINE IS ENTERED AT THREE POINTS -
2207 *
2208 * TSTRT - EXIT 0 FROM THE CHANNEL MODULE INTERRUPT HANDLER
2209 *
2210 * THE CHANNEL MODULE INTERRUPT HANDLER HAS DETERMINED THAT
2211 * THE I/O HAS COMPLETED SATISFACTORILY AND STATUS CAN BE
2212 * RETURNED. AFTER LEAVING STATUS RETURN THE CHANNEL WILL
2213 * BE FREE, AND THE NEXT ELIGIBLE I/O ENTRY WILL BE
2214 * STARTED.
2215 *
2216 * SRET1 - FROM IOS INTERRUPT HANDLER
2217 *
2218 * IOS HAS DETERMINED THAT A SPECIAL INTERRUPT STATUS OR A
2219 * NON-READY STATUS HAS BEEN RECEIVED IN RESPONSE TO A T&D
2220 * I/O TO A PSIA CHANNEL. THE STATUS WILL BE RETURNED AND
2221 * THE NEXT ELIGIBLE I/O ENTRY WILL BE STARTED.
2222 *
2223 * STRET - FROM EXIT 1 FOR THE CHANNEL MODULE REQUEST ROUTINE
2224 *
2225 * A MASS STORAGE NON-DATA TRANSFER COMMAND HAS BEEN
2226 * RECEIVED. THE COMMAND HAS BEEN SIMULATED AND AN
2227 * APPROPRIATE STATUS WILL BE RETURNED.
2228 *
2229 * - FROM EP#10, GEPR STATUS RETURN
2230 *
2231 * RETURN STATUS FOR GEPR, DNET, INTER-SLAVE COMMUNICATION,
2232 * AND ABORT I/O (EP#9). SET UP COURTESY CALL FOR FSO9.
2233 *
2234 * - FROM EP#34, SHARED ACCESS MPC LOCK BYTE REQUESTS
2235 *
2236 * A LOCK BYTE REQUEST HAS BEEN MADE TO A NON-SHARED SYSTEM
2237 * OR DEVICE. A STATUS OF READY-INITIATE IS BEING
2238 * RETURNED.
2239 *

EXIT 0 = STATUS RETURN ACTION

2240 * INPUT PARAMETERS FOR STATUS RETURN ACTION

2241 *
 2242 * X0 = TRANSFER ADDRESS
 2243 * X1 = TRUE CHANNEL INDEX
 2244 * X2 = LOGICAL PRIMARY CHANNEL INDEX
 2245 * X4 = I/O ENTRY ADDRESS
 2246 * X6 = KPX
 2247 * X7 = CPUNO

2248 *
 2249 * ODR1 = P.IOQ
 2250 * ODR6 = P.SSA (FOP OR USER)
 2251 * ODR7 = P.CR

2252 *
 2253 * NOTE.

2254 *
 2255 * ODR3 = PS.KL
 2256 * ODR2 = A.PSH

2257 *
 2258 * ABOVE DESCRIPTOR AND ODR0 IS DESTROYED

2259 *
 2260 * ALL GATES ARE OPEN

2261 *
 2262 * * * * *

003012
 000002
 000003

2263
 2264 EVEN
 2265 A.PSH SET 2 USER'S PH.PSH DESCRIPTOR
 2266 PS.KL SET 3 KL SEGMENT DESCRIPTOR

2267
 2268
 2269 FROM CHANNEL MODULE INTERRUPT HANDLER

2270 * * * * *
 2271

003012 100010 2351 14 000
 003013 100012 2361 14 000

2272 TSTRT NULL
 2273 LDA .WEEP1,4,P.IOQ RETRIVE STATUS
 2274 LDQ .WEEP2,4,P.IOQ

003017 000000 6202 00 000
 003020 701200 7403 11 000
 003021 701401 2203 12 000
 003022 701402 1003 12 000
 003023 003033 6002 00 010

003014

2275
 2276 INHIB ON
 2277 .SHUT .CRQGT,,P.CR
 2278 EAXO 0
 2279 STXO .CRI01,1,P.CR SET CHANNEL FREE
 2280 LDXO .CRCT2,2,P.CR TEST QUEUE COUNT
 2281 CMPXO .CRCT3,2,P.CR ONE ENTRY
 2282 TZE NOIO YES, DONT GO STIO

IOS06530
 IOS06535

003024 000666 6202 00 010
 003025 003434 7532 37 010
 003026 007700 2352 07 000
 003027 100000 2553 14 000

2283
 2284 EAXO GTCHN PREPARE RETURN FROM STRET
 2285 SREG ALLREG,7* SAVE REGISTERS
 2286 LDA =0770C,DL SET DEVICE # 63 (OMAGIMAI)
 2287 ORSA .WEST,4,P.IOQ DEVICE FREE

IOS06515

2288
 2289 GO NEXT I/O

EXIT 0 = STATUS RETURN ACTION

003030	007347	7032	00	010	2290	TSX3	STIO		
					2291				
003031	003434	0732	37	010	2292	LREG	ALLREG,7*	RESTORE ALL REGISTERS	
003032	003037	7102	00	010	2293	TRA	STRET+1	(REGISTERS ALREADY SAVED)	IOS06320
					2294				IOS06325
					2295				IOS06330
					2296	NOIO	.OPEN	.CRQGT,,P.CR	IOS06335
003035	000666	6202	00	010	2297	EAXD	GTCHN		IOS06340
					2298				
					2299	* * * * *			
					2300			FROM EXIT 1 FOR THE CHANNEL MODULE REQUEST ROUTINE	
					2301			EP#10, GEPR STATUS RETURN	
					2302			EP#34, SHARED ACCESS MPC LOCK BYTE REQUESTS	
					2303	* * * * *			
					2304				
					2305	INHIB	ON		IOS06350
					2306	STRET	NULL		
					2307				
003036	003434	7532	37	010	2308	SREG	ALLREG,7*	SAVE ALL REGISTER	
					2309				
003037	006013	4716	07	000	2310	LDP	P.IOQ,SD.IOQ,DL	GET DESCRIPTOR	
003040	003434	2232	17	010	2311	LDX3	ALLREG,7	LOCATE REGSTERS	IOS06365
003041	001761	4716	07	000	2312	LDP	P.IOQ,,CTYP,DL		
003042	006133	4736	07	000	2313	LDP	PS.KL,SD.KL,DL	GET KL SEGMENT DESCRIPTOR	
003043	100003	7263	14	000	2314	LXL6	.WEPID,4,P.IOQ	GET KPX FROM I/O ENTRY	
003044	000000	6352	16	000	2315	EAA	,6	NOT EQUAL, DIFFERRNT WS	
003045	000002	7352	00	000	2316	ALS	2		
003046	006024	4706	07	000	2317	LDP	PO,SD.PID,DL	GET WORKIBG SPACE REGISTER	
003047	000007	7526	13	000	2318	STWS	7,3	SAVE WSR 4-7	IOS06875
003050	000001	7727	01	000	2319	LDWS	1,AU,PO	GET WSR 4-7	
003051	003071	7102	00	010	2320	BUGSR	TRA	NOTR1 (NCP IF 57=0)	IOS04AAM
					2321				
					2322				
					2323				
					2324	* * * * *		RETURN STATUS TRACE * * * * *	IOS06725
					2325				
					2326				
					2327	.TROPN	NOTR1,GREG		
003052	700044	7173	00	000		XED	.CRTRV+2,,P.CR		
003053	000016	7102	04	3071		TRA	NOTR1,\$		
003054	700312	2203	17	000	2327	LDX0	.CRTEP,7,P.CR		
003055	700003	4423	10	000	2328	SXL2	3,0,P.CR	SET LOGICAL CHANNEL INDEX	IOS06375
003056	700003	7443	10	000	2329	STX4	3,0,P.CR	SET WORD3 I/O ENTRY ADDRESS	
003057	000000	6222	01	000	2330	EAX2	0,AU		
003060	700000	7423	10	000	2331	STX2	0,0,P.CR	SET WORD0 RETURN ADDRESS (IC)	
003061	000004	2352	13	000	2332	LDA	4,3	RETRIEVE AR	IOS06385
003062	700001	7553	10	000	2333	STA	1,0,P.CR	SET WORD1 STATUS WORD1	
003063	100003	7223	14	000	2334	LXL2	.WEPID,4,P.IOQ		
003064	700002	7423	10	000	2335	STX2	2,0,P.CR	SET WORD2 KPX FROM I/O ENTRY	
003065	000061	6222	00	000	2336	EAX2	.YSRET		
003066	700000	4423	10	000	2337	SXL2	0,0,P.CR	SET WORD0 TRACE TYPE CODE .YSTRT	

EXIT 0 = STATUS RETURN ACTION

				2338					
			003067	2339	.TRPUT	ASIS		PUT	
003067	000003	6202	00 000		EAX0	3			
003070	700052	7173	00 000		XED	.CRTRV+8,,P.CR			
				2340					
				2341	* * * * * T R A C E E N D				
				2342					
				2343					
			003071	2344	NOTR1	NULL			
003071	100014	7203	14 000	2345	LXLO	.WEICE,4,P.IOQ			
003072	003151	6002	00 010	2346	TZE	CACHE		NO STATUS RETURN	IOS04AAM
				2347	*				
003073	006013	4706	07 000	2348	LDP	PO,SD,IOQ,DL		STATUS REQUESTED	
003074	000014	6707	14 000	2349	LDD	PO,.WEICE,4,PO			
003075	000004	2372	13 000	2350	LDAQ	4,3		RETRIEVE STATUS WORDS	IOS06395
003076	000004	7553	00 000	2351	STA	.IWST1,,PO		STORE STATUS WORD1	
003077	000005	7563	00 000	2352	STQ	.IWST2,,PO		WORD2	
				2353	*				
				2354	*				
				2355	*				
				2356	*	STATUS WORDS STORED			
				2357	*	RESET PAT BUSY FLAG			
				2358	*				
				2359	*	MUST CHECK TO SEE IF THIS PROCESS IS			
				2360	*	CURRENTLY IN EXECUTION IN ANOTHER PROCESSOR,			
				2361	*	IF SO, MUST CAUSE CACHE MEMORY OF THAT			
				2362	*	PROCESSOR TO BE CLEARED.			
				2363	*				
003100	003151	7102	00 010	2364	INIT1	TRA	CACHE	UNIPROCESSOR CONFIG = TRA	IOS04AAM
				2365	*	NOP		MULTIPROCESSOR CONFIG = NOP	IOS04AAM
				2366		.SHUT	.CRDSF,,P.CR	SHUT DISPATCHER GATE	IOS04AAM
003104	700271	2223	00 000	2367	LDX2	.CRNPC,,P.CR		# OF PROCESSORS	EL8.
003105	777777	6222	12 000	2368	NXTPR	EAX2	-1,2	NEXT ONE	EL8.
003106	003115	6042	00 010	2369	TMI	CACHOM		NO MORE	EL8.
003107	300044	1063	12 000	2370	CMPX6	.KLPRG,2,P.KL		IS THIS PROCESS EXECUTING THERE	EL8.
003110	003105	6012	00 010	2371	TNZ	NXTPR		NO	EL8.
003111	700100	1023	17 000	2372	CMPX2	.CRCMC,7,P.CR		YES, IS IT US	EL8.
003112	003115	6002	00 010	2373	TZE	CACHOM		YES	EL8.
003113	300000	0543	12 000	2374	AOS	.KLCAC,2,PS,KL			
003114	700100	0153	12 000	2375	CIOC	.CRCMC,2,P.CR		CLEAR HIS CACHE	
				2376	*				
				2377	CACHOM	NULL		TEST SHAERED WORKING SPACE	
003115	100014	7203	14 000	2378	LXLO	.WEICE,4,P.IOQ		TEST DESCRIPTOR PRESENT	
003116	003122	6002	00 010	2379	TZE	*+4		NO, DESCRIPTOR	
003117	000177	3602	03 000	2380	ANX0	=0177,DU		RETRIVE TYPE AND REG. CODE	
003120	000160	6602	03 000	2381	ERX0	=0160,DU		IS TYPE ZERO AND REG.7	
003121	003137	6012	00 010	2382	TNZ	OCPU		NO, SHAERED WORKING SPACE I/O	
				2383					
003122	100001	2353	14 000	2384	LDA	.WEPRV,4,P.IOQ		GET CONTROL BITS	
003123	002000	3152	07 000	2385	CANA	.FFDD1,DL		IS PRESENT THE FIRST DATA	

EXIT 0 = STATUS RETURN ACTION

003124	003157	6002	00	010	2386	TZE	CACHOK	NO, TEST END	
003125	100016	7203	14	000	2387	LXLO	.WEDRI,4,P.I0Q		
003126	000177	3602	03	000	2388	ANXO	=0177,DU	RETRIVE TYPE AND REG. CODE	
003127	000160	6602	03	000	2389	ERXO	=0160,DU	IS TYPE ZERO AND REG.7	
003130	003137	6012	00	010	2390	TNZ	OCPU	NO, SHAERED WORKING SPACE I/O	
003131	001000	3152	07	000	2391	CANA	.FFDD2,DL	IS PRESENT THE SECOND DATA	
003132	003157	6002	00	010	2392	TZE	CACHOK	NO, TEST END	
003133	100020	7203	14	000	2393	LXLO	.WEDRF,4,P.I0Q		
003134	000177	3602	03	000	2394	ANXO	=0177,DU	RETRIVE TYPE AND REG. CODE	
003135	000160	6602	03	000	2395	ERXO	=0160,DU	IS TYPE ZERO AND REG.7	
003136	003157	6002	00	010	2396	TZE	CACHOK	TEST END	
					2397				
					2398	OCPU	NULL		
003137	700271	2223	00	000	2399	LDX2	.CRNPC,,P.CR	GET CPU NUMBER	
003140	000001	1222	03	000	2400	SBLX2	1,DU		
003141	003161	6042	00	010	2401	TMI	CACHY	ALL CPU DONE	IOS04AAM
003142	700100	2343	12	000	2402	SZN	.CRCMC,2,P.CR	IS PROCESSOR ACTIVE	11FW0840
003143	003140	6046	00	010	2403	TMOZ	OCPU+1	NO	11FW0850
003144	300000	0543	12	000	2404	AOS	.KLCAC,2,PS.KL		
003145	700100	1023	17	000	2405	CMPX2	.CRCMC,7,P.CR	IS IT US	EL8.
003146	003140	6002	00	010	2406	TZE	OCPU+1	YES, DONT CONNECT	11FW0880
003147	700100	0153	12	000	2407	CIOC	.CRCMC,2,P.CR	SEND FLAG TO CLEAR CACHE	
003150	003140	7102	00	010	2408	TRA	OCPU+1	NEXT CPU	
					2409	*			
003151	100005	7203	14	000	2410	CACHE	LXLO	GET COMMAND TYPE	IOS04AAM
003152	000002	3002	03	000	2411	CANXO	.FBT34,DU	IS CMD WRITE	IOS04AAM
003153	003163	6012	00	010	2412	TNZ	CACHX	YES, DON'T CLEAR CACHE	EL8.
					2413	.SHUT	.CRDSP,,P.CR	WATCH OUT FOR DISPATCHER	IOS04AAM
					2414	CACHOK	LDA	SET CLEAR CACHE FLAG	IOS04AAM
003157	000200	2352	07	000	2415	ORSA	.SRGST,,P.SSA		
003160	600117	2553	00	000	2416	CACHY	.OPEN	OPEN GATE	IOS04AAM
					2417	CACHX	LDP	GET PUSH DESCRIPTOR	IOS04AAM
003163	006204	4726	07	000	2418	LDX2	.WEPEF,4,P.I0Q	GET PAT POINTER OFFSET	
003164	100005	2223	14	000	2419	TZE	NOPPT	NO PAT POINTER	
003165	003171	6002	00	010	2420	LDD	PO,PH,PAT,,A.PSH		
					2421			PAT DESCRIPTOR TO ODRO	
003167	100001	3352	07	000	2422	LCA	.FBSYF+1,DL	777777677777	29FW0060
003170	000000	3553	12	000	2423	ANSA	0,2,PC	RESET FLAG, NO FILE REQUEST ACTIVE	
					2424	*			
					2425	*	RETURN	DCW FOR 'NODCW'	
					2426	*			
					2427	NOPPT	NULL		
003171	040000	2352	07	000	2428	LDA	.FFDCW,DL	SEE IF 'NODCW' FLAG ON	
003172	100001	3153	14	000	2429	CANA	.WEPRV,4,P.I0Q		
003173	003205	6002	00	010	2430	TZE	NOPFX	NO, NORMAL DCW	
					2431	*		DCW IS DCW SEGMENT	
003174	200034	6707	00	000	2432	LDD	PO,PH,DCW,,A.PSH		
					2433			DCW-DESCRIPTOR	
003175	100007	2223	14	000	2434	LDX2	.WEOFF,4,P.I0Q	GET DCW ADDRESS	
003176	777777	2352	03	000	2435	LDA	-1,DU	RETURN DCW FLAG UPPER BITS-ON	

EXIT 0 = STATUS RETURN ACTION

003177	000000	7553	12	000	2436	STA	0,2,PC	SET
003200	100001	7223	14	000	2437	LXL2	.WEPRV,4,P.IOQ	TEST SECOND DCW EXIST
003201	001000	3022	03	000	2438	CANX2	.FFDD2,DU	IS EXIST
003202	003205	6002	00	010	2439	TZE	NOPFX	NONE, DATA IS FMS'S CC ADDRESS, MAY BE
003203	100007	7223	14	000	2440	LXL2	.WEOFF,4,P.IOQ	GET SECOND DCW ADDRESS
003204	000000	7553	12	000	2441	STA	0,2,PC	RETURN DCW
					2442	*		
		003205			2443	NOPFX	NULL	NO, 'NODCW'
003205	000001	2222	13	000	2444	LXD2	1,3	RESTORE LCX
		003206			2445	.SHUT	.CRQGT,,P.CR	IOS06410
003211	100000	2353	14	000	2446	LDA	.WEST,4,P.IOQ	GET I/O ENTRY STATUS
003212	000077	3752	07	000	2447	ANA	.FIOST,DL	IS GEPR, REMOTE, INTER-COM
003213	000001	1152	07	000	2448	CMPA	1,DL	STATUS IS BUILDING
003214	003224	6002	00	010	2449	TZE	SGPCM	DONT UNLINK
003215	003222	7412	00	010	2450	STX1	SAVX1	SAVE X1
003216	400000	2352	07	000	2451	LDA	.FSTOP,DL	RESET ALL BUT STOP BIT
003217	000001	2212	03	000	2452	LXD1	1,DU	AMOUNT TO DECREMENT IN XMISSION COUNT
003220	000001	2362	07	000	2453	LDQ	1,DL	SET BUILDING STATUS FOR NOW
					2454			
003221	013201	7002	00	010	2455	TSX0	ULNK	UNLINK I/O, DECREMENT LINKED COUNT
					2456			AND IN TRANSMISSION COUNT
					2457	*		
003222	000000	2612	03	000	2458	SAVX1	ORX1 ** ,DU	RESTORE X1 WITH SPEC. COMMAND FLAG
003223	003233	7102	00	010	2459	TRA	LNKCC	GO CHECK FOR COURTESY CALL
					2460			
					2461			
					2462	*		
					2463	*	GEPR, REMOTE, OR INTER-SLAVE COMM. FILE I/O, ALREADY UNLINKED	
					2464	*		
		003224			2465	SGPCM	NULL	
003224	100004	2223	14	000	2466	LXD2	.WESCT,4,P.IOQ	IS INTER-COM FILE
003225	017774	3622	03	000	2467	ANX2	.FSCT1,DU	
003226	003233	6012	00	010	2468	TNZ	LNKCC	NO, DONT DECRMT. QCT FOR GPER OR REMT
003227	000001	3352	03	000	2469	LCA	1,DU	
003230	600160	0553	00	000	2470	ASA	.SRQCT,,P.SSA	DECREMENT UPPER FOR INTER-COM
003231	000001	3352	07	000	2471	LCA	1,DL	
003232	600113	0553	00	000	2472	ASA	.SINQR,,P.SSA	DECREMENT INTER-COM. FILE COUNT
					2473			
					2474			
					2475	*		
					2476	*	CHECK COURTESY CALL REQUEST	
					2477	*		
		003233			2478	LNKCC	NULL	
003233	100022	7203	14	000	2479	LXLO	.WEIOE,4,P.IOQ	TEST COURTESY CALL REQUESTED
003234	003306	6002	00	010	2480	TZE	NOCCA	NO COURTESY CALL REQUESTED
					2481			
		003235			2482	.SHUT	.KLSCC,,PS,KL	SHUT CCG
003240	000005	2362	07	000	2483	LDQ	5,DL	SET I/O ENTRY STATE TO CC WAITING
003241	100000	2563	14	000	2484	ORSQ	.WEST,4,P.IOQ	
					2485	*		

EXIT 0 = STATUS RETURN ACTION

				2486 *		COURTESY CALL GATE AND I/O QUEUE GATE SHUT	
				2487 *			
003242	000001	2352 03	000	2488	LDA	1,DU	INCREMENT QUEUE COUNT
003243	600160	0553 00	000	2489	ASA	.SRQCT,,P.SSA	FOR LINKED ENTRY
003244	000000	2202 03	000	2490	LDXO	0,DU	CC ENTRY QUEUING
003245	300050	7223 00	000	2491	LXL2	.KLSCC,,PS.KL	
003246	003252	6002 00	010	2492	TZE	NOCCQ	NO ENTRY IN QUEUE
003247	100000	7443 12	000	2493	STX4	.WEST,2,P.IOQ	SET QUEUE CHAINNIG
003250	100001	7423 14	000	2494	STX2	.WEPRV,4,P.IOQ	
003251	003254	7102 00	010	2495	TRA	CNTCC	
		003252		2496	NOCCQ	NULL	COUTESY CALL GATE SHUT
				2497 *			
003252	300050	7443 00	000	2498	STX4	.KLSCC,,PS.KL	STORE NEW FIRST ENTRY
003253	100001	7403 14	000	2499	STX0	.WEPRV,4,P.IOQ	NO PREVIOUS ENTRY
				2500 *			
				2501 *		SET .SRQST AND .SCCAL FOR THIS PROCESS	
				2502 *			
		003254		2503	CNTCC	NULL	
003254	300050	4443 00	000	2504	SXL4	.KLSCC,,PS.KL	STORE NEW LAST ENTRY
003255	100000	7403 14	000	2505	STX0	.WEST,4,P.IOQ	NO NEXT ENTRY
003256	000001	2362 03	000	2506	LDQ	1,DU	TEST COURTESY CALL TYPE
003257	000220	2352 07	000	2507	LDA	.FSYOT+.FNABT,DL	
003260	100004	3153 14	000	2508	CANA	.WESCT,4,P.IOQ	IS SYSOUT I/O ENTRY
003261	003303	6012 00	010	2509	TNZ	SYOTCC	YES,
003262	100000	2352 07	000	2510	LDA	.FFTYP,DL	
003263	100001	3153 14	000	2511	CANA	.WEPRV,4,P.IOQ	IS SYSTEM I/O ENTRY
003264	003303	6012 00	010	2512	TNZ	SYOTCC	YES
003265	000004	2352 03	000	2513	LDA	.RCC,DU	STATE CC WAITING
				2514			
		003266		2515	CCCNT	NULL	
003266	600027	0563 00	000	2516	ASQ	.SCCAL,,P.SSA	COUNT TOTAL CC WAITING
				2517			
		003267		2518	.OPEN	.KLSCC,,PS.KL	OPEN CC GATE
		003271		2519	.OPEN	.CRQGT,,P.CR	OPEN I/O QUEUE GATE
		003273		2520	.SHUT	.CRDSF,,P.CR	SHUT DISPATCHER GATE
003276	600117	2553 00	000	2521	ORSA	.SRQST,,P.SSA	SET STATE OF CC
003277	600017	2353 00	000	2522	LDA	.STATE,,P.SSA	
003300	400000	3152 07	000	2523	CANA	.TRELCC,DL	IS RELINQUISH SET
003301	003363	6012 00	010	2524	TNZ	RELCCB	YES, BREAK IT
003302	003400	7102 00	010	2525	TRA	ENABL	NO, ENABLE PROCESS
				2526 *			
003303	000001	2762 07	000	2527	SYOTCC	ORQ	1,DL
003304	000400	2352 03	000	2528	LDA	.RSYCC,DU	SYSTEM LEVEL CC, COUNT IT SEPARATELY
003305	003266	7102 00	010	2529	TRA	CCCNT	SET SYSOUT CC WTNG
				2530 *			
				2531 *		NO COURTESY CALL REQUESTED - RELEASE I/O ENTRY AND	
				2532 *		REDUCE COUNT	
				2533 *			
		003306		2534	NOCCA	NULL	
				2535 *			

IOS06005

ANON1520

ANON1530

ANON1540

ANON1550

IOS06015

IOS06020

IOS06025

IOS06030

EXIT 0 = STATUS RETURN ACTION

					2536 *	TEST GEPR SPECIAL INTERFACE		
					2537 *			
003306	100004	2203	14	000	2538	LDXO .WESCT,4,P.IOQ	TEST	
003307	100000	3002	03	000	2539	CANXO .FDNTU,DU	IS SET 'DONT UN-LINK' IND.,	
003310	003323	6012	00	010	2540	TNZ NULNK	YES, DONT UN-LINK	
					2541 *			
					2542 *			
003311	100005	7203	14	000	2543	LXLO .WEPEP,4,P.IOQ	IS GEPR SPECIAL COMMAND	
003312	004000	3002	03	000	2544	CANXO .FREIS,DU	ID GEPR REISSUE I/O	
003313	003323	6012	00	010	2545	TNZ NULNK	YES, THIES ENTRY ID UNLINKED BY GEPR	
003314	002000	3002	03	000	2546	CANXO .FSGPR,DU	IS GEPR SPECIAL I/O	
003315	003322	6002	00	010	2547	TZE YULNK	NO, UN-LINK ENTRY	
003316	006013	4706	07	000	2548	LDP PO,SD.IOQ,DL	GEPR ISSUE I/O IS NON READY	
003317	000014	6707	14	000	2549	LDD PO,.WEICB,4,PO	THEN RETURN I/O ENTRY OFFSET	
003320	000002	4443	00	000	2550	SXL4 .IWDAT,,PO	AND NOT UN-LINK I/O ENTRY	
					2551		FOR RECOVERY	
003321	003323	7102	00	010	2552	TRA NULNK	NOT UN-LINK	
		003322			2553	YULNK NULL		
		003322			2554	.ULINK	UNLINK ENTRY	
003322	012644	7002	00	010		TSXO ULINK		
					2555			
		003323			2556	NULNK NULL		
003323	600160	2343	00	000	2557	SZN .SRQCT,,P.SSA	I/O QUEUE COUNT ZERO	
003324	003342	6002	00	010	2558	TZE SRBLK	ZERO, CHECK ROADBLOCK	
					2559 *			
					2560 *	CHECK PROCESS STATE FOR RELINQUISH OR ALARM		
					2561 *			
		003325			2562	SRELC NULL		
					2563			
		003325			2564	.OPEN .CRQGT,,P.CR		IOS01280
		003327			2565	.SHUT .CRDSP,,P.CR		IOS01290
003332	600017	2353	00	000	2566	SRLC2 LDA .STATE,,P.SSA	GET STATE WORD	
					2567 *			
					2568 *	DISPATCHER GATE SHUT		
					2569 *			
		003333			2570	SRLC1 NULL		
003333	400000	3152	07	000	2571	CANA .TRELCD,DL	IS RELINQUISH SET	
003334	003363	6012	00	010	2572	TNZ RELCB	YES, BREAK RELINQUISH	
003335	000200	3152	07	000	2573	CANA .TALRM,DL	IS ALARM SET	
003336	003400	6012	00	010	2574	TNZ ENABL	YES, BREAK ALARM	
003337	000400	2352	07	000	2575	LDA .RIOTM,DL		IOS06570
003340	600117	2553	00	000	2576	ORSA .SRQST,,P.SSA		IOS06575
003341	003421	7102	00	010	2577	TRA SOPDS	NEITHER, OPEN DISP GATE AND RETURN	
					2578 *			
					2579 *	ACTIVE ENTRY COUNT WENT TO ZERO		
					2580 *	CHECK FOR ROADBLOCK TO BE BROKEN		
					2581 *			
		003342			2582	SRBLK NULL		
					2583			
		003342			2584	.OPEN .CRQGT,,P.CR	OPEN I/O QUEUE GATE	

EXIT 0 = STATUS RETURN ACTION

				003344	2585	.SHUT	.CRDSP,,P.CR		IOS01820
003347	600117	2353	00	000	2586	LDA	.SRQST,,P.SSA	GET REQUEST STATE	
003350	010000	3152	03	000	2587	CANA	.RGEPR,DU	IS GEPR REQUESTED	
003351	003332	6012	00	010	2588	TNZ	SRLC2	YES, CAN NOT BREAK ROADBLOK	
003352	600017	2353	00	000	2589	LDA	.STATE,,P.SSA	GET STATE	
003353	010000	3152	03	000	2590	CANA	.TGEPR,DU	IS GEPR IN CONTROL	
003354	003333	6012	00	010	2591	TNZ	SRLC1	YES, CAN NOT BREAK ROADBLOK	
003355	200000	3152	07	000	2592	CANA	.TRDBK,DL	IS ROADBLOCK SET	
003356	003333	6002	00	010	2593	TZE	SRLC1	NO, CHECK FOR RELINQUISH	
					2594 *				
					2595 *			ROADBLOCK WAS SET, BREAK IT	
					2596 *				
003357	200000	6752	07	000	2597	ERA	.TRDBK,DL	TURN OFF ROADBLOCK BIT	ANON1570
003360	600017	7553	00	000	2598	STA	.STATE,,P.SSA	IN STATE WORD	ANON1580
003361	000057	2352	07	000	2599	LDA	.YRODE,DL	SET ROADBLOCK BROKEN TRACE CODE	
003362	003366	7102	00	010	2600	TRA	RBRLT		
					2601 *				
					2602 *			RELINQUISH WAS SET, BREAK IT	
					2603 *				
					2604	RELCB	NULL		
					2605			DISPATCHER GATE SHUT	
					2606				
003363	400000	6752	07	000	2607	ERA	.TRELCDL	TURN OFF RELINQUISH BIT	ANON1600
003364	600017	7553	00	000	2608	STA	.STATE,,P.SSA	IN STATE WORD	ANON1610
003365	000056	2352	07	000	2609	LDA	.YRLCB,DL	SET RELINQUISH BROKEN TRACE CODE	
					2610 *				
					2611 *			BUILD ROADBLOCK CR RELINQUISH BROKEN TRACE	
					2612 *				
					2613	RBRLT	NULL		
					2614			DISPATCHER GATE SHUT	
					2615				
					2616				
					2617	*	*	* * * * ROADBLOCK / RELINQUISH TRACE * * * * *	IOS06735
					2618				
					2619			. Y R L C B - R E L I N Q U I S H B R O K E N	
					2620				
					2621			. Y R O D B - R O A D B L O C K B R O K E N	
					2622				
					2623			.ABCVE CODE IS SETED IN A REGISTER	
					2624				
					2625				
					003366	.TROPN	ENABL,GREG		
003366	700044	7173	00	000		XED	.CRTRV+2,,P.CR		
003367	000011	7102	04	34 00		TRA	ENABL,\$		
003370	700312	2203	17	000	2626	LDX0	.CRTEP,7,P.CR		
003371	700000	7553	10	000	2627	STA	0,0,P.CR	SET TRACE TYPE CODE	
003372	600017	2353	00	000	2628	LDA	.STATE,,P.SSA		
003373	700002	7553	10	000	2629	STA	2,0,P.CR	SET .STATE	
003374	600117	2353	00	000	2630	LDA	.SRQST,,P.SSA		
003375	700003	7553	10	000	2631	STA	3,0,P.CR	SET .SRQST	
					2632				

EXIT 0 = STATUS RETURN ACTION

```

003376 000002 6202 00 000 2633 .TRPUT TODPNC SET CPUNO, KPX, AND TOD
003377 700052 7173 00 000 EAXO 2
XED .CRTRV+8,,P.CR
2634
2635 * * * * * T R A C E E N D
2636
2637
2638 *
2639 * PROCESS STATE HAS CHANGED, ENABLE PROCESS
2640 *
003400 2641 ENABL NULL
003400 003434 2232 17 010 2642 LDX3 ALLREG,7 LOCATE REGISTERS IOS06545
003401 000400 2352 07 000 2643 LDA .RIOTM,DL SET I/O COMPLETE SINCE LAST LINK
003402 600117 2553 00 000 2644 ORSA .SRQST,,F.SSA IN PROCESS STATE
003403 000000 4412 13 000 2645 SXL1 0,3 PASS X1 IOS06420
003404 000002 7442 13 000 2646 STX4 2,3 & X4 IOS06425
003405 006133 4706 07 000 2647 LDP PO,SD,KL,DL IOS04AAM
003406 000044 2353 17 000 2648 LDA .KLPRG,7,PO GET KPX IOS04AAM
003407 000002 7352 00 000 2649 ALS 2 *4 IOS04AAM
003410 006024 4706 07 000 2650 LDP PO,SD,PID,DL IOS04AAM
003411 000001 7727 01 000 2651 LDWS 1,AU,PO RESTORE WSR 4-7 IOS04AAM
2652
003412 000000 4716 07 000 2653 ENAB2 LDP P1,**,DL .MDISP SEGID IOS04800
003413 000003 6306 04 000 2654 EPPR PO,3,IC SET RETURN IOS04805
003414 600012 4507 56 000 2655 STP PO,,SSA,ID,P.SSA IN STACK IOS04810
003415 100007 7103 00 000 2656 TRA 7,,P1 (.MDISP,7 ENABLE) IOS04815
2657 * IOS04820
003416 006133 4736 07 000 2658 LDP P.KL,SD,KL,DL RELOAD P.KL IOS04825
003417 006013 4716 07 000 2659 LDP P.IOQ,SD.IOQ,DL RE-LOAD P.IOQ
003420 001761 4716 07 000 2660 LDP P.IOQ,.CTYP,DL
2661
2662
2663 *
2664 * PROCESS WHOSE STATE CHANGED HAS BEEN ENABLED
2665 * RETURN TO CALLER
2666 *
003421 2667 SOPDS NULL
003421 2668 .OPEN .CRDSP,,F.CR OPEN DISPATCHER GATE IOS06435
003423 003434 2202 17 010 2669 LDX0 ALLREG,7 LOCATE REGISTERS IOS06440
003424 000007 7726 10 000 2670 LDWS 7,0 RESTORE WSR 4-7 IOS06445
003425 000000 0732 10 000 2671 LREG 0,0 RESTORE REGISTERS IOS06450
003426 300044 2263 17 000 2672 LDX6 .KLPRG,7,P.KL RESTORE KPX IOS04AAM
003427 000000 7102 10 000 2673 TRA 0,0 RETURN TO CALLER
2674
2675 *
2676 * DATA AREA
2677 *
003430 2678 QSAVE NULL Q-REG. SAVE AREA
003430 000000 000000 000 2679 ZERO FOR CPUNO-0
003431 000000 000000 000 2680 ZERO FOR CPUNO-1

```

EXIT 0 = STATUS RETURN ACTION

003432	000000	000000	000	2681	ZERO		FOR CPUNO-2
003433	000000	000000	000	2682	ZERO		FOR CPUNO-3
		003434		2683	ALLREG	NULL	
003434	014170	0000 00	010	2684	ARG	POREG	
003435	014200	0000 00	010	2685	ARG	POREG+8	IOS00130
003436	014210	0000 00	010	2686	ARG	POREG+16	IOS00140
003437	014220	0000 00	010	2687	ARG	POREG+24	IOS00150

RELEASE CHANNEL AND START I/O ON NEXT ELIGIBLE ENTRY

```

2689 *
2690 *   REGISTERS CONVENTION
2691 *
2692 *   X1=   TCX
2693 *   X2=   LPCX
2694 *   X4=   I/O ENTRY OFFSET REL. TO P.IOS
2695 *   X5=
2696 *   X6=   KPX OF I/O ENTRY
2697 *   X7=   PROCESSOR #
2698 *
2699 *
003440 2700   TRLCH  NULL
003440 2701   INHIB  ON
003440 100000 3012 03 000 2702   CANX1  .FDNTU,DU   IS SPEC CMD NEXT      IOS03320
003441 003451 6002 00 010 2703   TZE     TRLC1    NO,RELEASE CHAN.
003442 003774 3612 03 000 2704   ANX1    .FCHNX,DU   YES FIX X1 AND ISSUE SPECIAL CMD
003443 701200 2243 11 000 2705   SPCMD  NULL
003443 003443 2706   LDX4    .CRI01,1,P.CR   GET REAL I/O ENTRY OFFSET FOR PUSE. I
003447 007674 7032 00 010 2707   .SHUT   .CRQGT,,P.CR
003450 000666 7102 00 010 2708   TSX3    STSPC      SEND SPECIAL CMD
2709   TRA    GTCHN
2710 *
2711 *
003451 2712   TRLC1  NULL
003451 701200 2243 11 000 2713   LDX4    .CRI01,1,P.CR
003452 701200 6443 11 000 2714   ERSX4   .CRI01,1,P.CR   RELEASE CHANNEL
003453 701401 2253 12 000 2715   LDX5    .CRCT2,2,P.CR   ARE THERE ANY I/O ENTRIES?
003454 000666 6002 00 010 2716   TZE     GTCHN      NO SKIP STIO
003455 002156 0342 00 010 2717   LDAC    FLTIT    IS FAULT CHANNEL ACTIVE   ANON0730
003456 002156 7552 00 010 2718   STA     FLTIT    RESTORE STATUS           ANON0740
003457 000666 6012 00 010 2719   TNZ     GTCHN      YES, NO STIO           ANON0750
003463 007347 7032 00 010 2720   .SHUT   .CRQGT,,P.CR
2721   TSX3    STIO
2722
2723 * .CRQGT IS OPEN AFTER STIO
003464 000666 7102 00 010 2724   TRA     GTCHN      START I/O ON ELIGIBLE ENTRY
2725 *                                     IN I/O STREAM
2726   INHIB  OFF      LOOK FOR MORE INTERRUPT
2727 *

```


EXIT1 = GEPR ACTION (TGEFR)

				2730 *			
				2731 *	CHAN MOD EP1 HAS DETERMINED THAT STATUS REQUIRES GEPR		
				2732 *	RECOVERY ACTION (GEPR OVERRIDE WAS NOT REQUESTED)		
				2733 *			
				2734 *	REGISTERS CONVENTION		
				2735 *	X1 = TCX		
				2736 *	X2 = LCPX		
				2737 *	X4 = I/O ENTRY OFFSET		
				2738 *	X6 = KPX		
				2739 *	X7 = PROCESSOR#		
				2740 *			
				2741 *	ODR1 =P. IOQ (TYPE=0)		
				2742 *	ODR2 =P. RMS		
				2743 *	ODR6 =P. SSA		
				2744 *	ODR7 =P. CR		
				2745 *			
				2746 *			
				2747 *			
				2748 *			
		003465		2749 TGEPR	NULL		
003465	100000	2361 14	000	2750	LDQ .WEST,4,P.IOQ	LOAD I/O ENTRY STATUS	
003466	000050	3760 07	000	2751	ANQ =050,DL	SAVE TAPE MSG AND EXCHG. INF.	
003467	000004	2760 07	000	2752	ORQ 4,DL	INSERT GEPR BIT	
		003470		2753 LOADA	NULL		
		003470		2754	.SHUT .CRGPG,,P.CR		
		003473		2755	.SHUT .CRQGT,,P.CR		
				2756	INHIB ON		
				2757 *			
003476	003604	7412 00	010	2758	STX1 TEMP	X1 WAS DESTROYED BY LINK	
003477	000001	2212 03	000	2759	LDX1 1,DU	AMOUNT TO DECREMENT IN XMIT COUNT	
003500	000000	6352 16	000	2760	EAA 0,6	SET KPX IN A	
003501	000002	7352 00	000	2761	ALS 2		
003502	006024	4706 07	000	2762	LDP P.PID,SD,PID,DL		
003503	000001	7727 01	000	2763	LDWS 1,AU,P.PID	SET LOWER OF WSR	
003504	100005	2353 14	000	2764	LDA .WEPEP,4,P.IOQ	CHECK CMD TYPE FOR CACHE CLEAR	
003505	000002	3152 07	000	2765	CANA .FBT34,DL	IS CMD WRITE	EL8.
003506	000003	6012 04	000	2766	TNZ 3,IC	YES, NO CCAC	EL8.
003507	000200	2352 07	000	2767	LDA .RCCAC,DL	SET CACHE CLEAR FLAG	
003510	600117	2553 00	000	2768	ORSA .SRGST,,P.SSA	SET IT	
003511	740000	2352 07	000	2769	LDA =0740000,DL	RESET SPEC + INTR. FLAG	
003512	013201	7002 00	010	2770	TSXD ULNK	UNLINK I/O ENTRY,DECREMENT LINKED	
				2771 *		COUNT AND IN XMIT COUNT	
				2772 *			
003513	003604	2412 00	010	2773	ORSX1 TEMP	TURN ON SPECIAL CMD FLAG	
003514	020000	2352 07	000	2774	LDA .FSHRD,DL	IS THIS SHARED DEVICE ?	
003515	701400	3153 12	000	2775	CANA .CRCT1,2,P.CR		
003516	003523	6012 00	010	2776	TNZ GOPQG	YES, DON'T STOP IT	
003517	100004	2213 14	000	2777	LDX1 .WESCT,4,P.IOQ		
003520	017774	3612 03	000	2778	ANX1 .FSCT1,DU		
003521	000001	2352 07	000	2779	LDA .FSTCH,DL		

EXIT1 = GEPR ACTION (TGEPR)

003522	700000	2553	11	000	2780	ORSA	0,1,P,CR	SET STOP BIT IN DEV. SCT
					2781	*		
		003523			2782	GOPQG	NULL	
003523	003604	2212	00	010	2783	LDX1	TEMP	RELOAD TCX IN X1
003524	003774	3612	03	000	2784	ANX1	.FCHNX,DU	TURN OFF SPECIAL CMD FLAG
					2785	*	LDX3	.CRMB3,1,P,CR
					2786	*	LDA	0,3,P,RMS
					2787	*	STA	.WEEP1,4,P,IOQ
					2788	*	LDA	1,3,P,RMS
					2789	*	STA	.WEEP2,4,P,IOQ
					2790	*		STORE SW 1 IN .WEEP1 OF I/O ENTRY
								ALREADY SET BY IH
								STORE SW 2 IN .WEEP2 OF I/O ENTRY
003525	003604	4422	00	010	2791	SXL2	TEMP	DESTROY BY DISP
003526	050000	2352	03	000	2792	LDA	.TGPRS+.TGEPR,DU	IN SPECIAL GEPR OR GENERAL GEPR
003527	600017	3153	00	000	2793	CANA	.STATE,,P,SSA	
003530	003544	6002	00	010	2794	TZE	NTRECR	EITHER
003531	040000	2352	03	000	2795	LDA	.TGPRS,DU	
003532	600017	3153	00	000	2796	CANA	.STATE,,P,SSA	IN SPECIAL GEPR CONTROL
003533	003540	6002	00	010	2797	TZE	NTSYS	NO
003534	100001	2353	14	000	2798	LDA	.WEPRV,4,P,IOQ	YES
003535	100000	3152	07	000	2799	CANA	.FFTYF,DL	WAS IT SYSTEM I/O
003536	003552	6002	00	010	2800	TZE	NOSYS	
003537	003554	7102	00	010	2801	TRA	GPRI0	
					2802	*		
		003540			2803	NTSYS	NULL	
003540	100001	2353	14	000	2804	LDA	.WEPRV,4,P,IOQ	
003541	100000	3152	07	000	2805	CANA	.FFTYF,DL	
003542	003547	6012	00	010	2806	TNZ	SYSERR	
003543	003554	7102	00	010	2807	TRA	GPRI0	
		003544			2808	NTRECR	NULL	
003544	100001	2353	14	000	2809	LDA	.WEPRV,4,P,IOQ	
003545	100000	3152	07	000	2810	CANA	.FFTYF,DL	SYSTEM I/O
003546	003552	6002	00	010	2811	TZE	NOSYS	NO SYSTEM I/O
003547	040000	2352	03	000	2812	SYSERR	LDA	.RGPRS,DU
003550	600117	2553	00	000	2813	ORSA	.SRQST,,P,SSA	SET IT
003551	003554	7102	00	010	2814	TRA	GPRI0	
					2815	*		
		003552			2816	NOSYS	NULL	
003552	010000	2352	03	000	2817	LDA	.RGEPR,DU	
003553	600117	2553	00	000	2818	ORSA	.SRQST,,P,SSA	NO, SET GEPR NEEDED BIT IN .SRQST
					2819	*		
					2820	*		
		003554			2821	GPRI0	NULL	
		003554			2822		.OPEN	.CRQGT,,P,CR
		003556			2823		.OPEN	.CRGPG,,P,CR
					2824	*		
		003560			2825	.SHUT	.CRDSP,,P,CR	
003563	000400	2352	07	000	2826	LDA	.RIOTM,DL	SET I/O TERMINATED BIT
003564	600117	2553	00	000	2827	ORSA	.SRQST,,P,SSA	
003565	400000	2352	07	000	2828	LDA	.TRELCD,DL	IS RELINQUISH BIT ON ?
003566	600017	3153	00	000	2829	CANA	.STATE,,P,SSA	

ANON1640

EXIT1 = GEPR ACTION (TGEPR)

003567	003571	6002	00	010	2830
003570	600017	6553	00	000	2831
003571	001703	7726	00	010	2832
		003572			2833

TZE	**2
ERSA	.STATE,,F.SSA
LDWS	IHWS
.CALL	.MDISP,7
INHIB	SAVE,ON
EPRO	**3,\$
TRA	.CRCAL,,P.CR
ZERO	.MDISP,7
INHIB	RESTORE

NO
RESET IT
SET IHLR WSR 4-7
PUT PROCESS IN QUEUE

IOS04AAM

003572	000003	6306	04	3575
003573	700002	7103	00	000
003574	000057	000007		000

2834 *
2835 *

003575

2836	.OPEN	.CRDSP,,P.CR
2837	*	

003577	006013	4716	07	000	2838
003600	001761	4716	07	000	2839

LDP	P1,SD,IOQ,DL
LDP	P1,.CTYP,DL

RELOAD I/O SEG.DESC

003601	003604	2212	00	010	2841
003602	003604	7222	00	010	2842
003603	003440	7102	00	010	2843

LDX1	TEMP
LXL2	TEMP
TRA	TRLCH

RELOAD TCX IN X1 AND LPCX INX2

003604

2844	*
2845	TEMP BSS 1

EXIT2 = GESPEC ACTION (TGSPC)

```

2847 *
2848 * SI HAS OCCURRED ON GESPEC-ALLOWED DEVICE
2849 * THIS WILL DETERMINE IF THERE IS AN I/O ENTRY WHICH
2850 * SHOULD BE STARTED
2851 *
2852 * REGISTERS CONVENTION
2853 *
2854 * X1 = TCX
2855 * X2 = LPCX
2856 * X7 = PROCESSOR#
2857 *
2858 * ODR1 =P.IOQ (TYPE=0)
2859 * ODR3 =
2860 * ODR6 =P.SSA
2861 * ODR7 =P.CR
2862 *
2863 *
2864 *
003605 2865 TGSPC NULL
2866 INHIB ON
003605 2867 .SHUT .CRQGT,,P.CR SHUT I/O QUEUE GATE
2868 *
003610 701400 2233 12 000 2869 LDX3 .CRCT1,2,P.CR
003611 000200 3032 03 000 2870 CANX3 =0200,DU IS A GESPECED ENTRY LINKED ?
003612 003624 6002 00 010 2871 TZE GPCSI NO,SET SI FLAG
003613 701401 2243 12 000 2872 LDX4 .CRCT2,2,P.CR YES,GET I/O ENTRY ADDR
003614 003624 6002 00 010 2873 TZE GPCSI NOTHING LINKED NOW,REMEMBER IT
003615 020000 2352 07 000 2874 LDA .FSPEC,DL GESPECED BIT
003616 430001 3362 07 000 2875 LCQ =0430C01,DL
003617 000300 5002 00 000 2876 GSRCH NULL
2877 RPL 0,TZE
003620 100000 2113 14 000 2878 CMK 0,4,P.IOQ EXAMINE I/O QUEUE FOR MATCH
003621 003631 6072 00 010 2879 TTF GSPNT FOUND GESPEC--LINKED ENTRY
003622 100000 2203 14 000 2880 LDX0 0,4,P.IOQ
003623 003617 6012 00 010 2881 TNZ GSRCH TALLY EXHAUSTED
2882 *
003624 2883 GPCSI NULL GESPECED ENTRY HAS NOT LINKED
2884 *
003624 400000 2352 07 000 2885 LDA .FSPRM,DL REMEMBERED SPEC INT BIT
003625 701200 2553 11 000 2886 ORSA .CRI01,1,P.CR SET SI FLAG IN TRUE CHANNEL ENTRY
2887 *
003626 2888 OPQGT NULL
003626 2889 .OPEN .CRQGT,,P.CR
2890 *
2891 INHIB OFF
2892 *
003630 000666 7100 00 010 2893 TRA GTCHN LOOK FOR MORE INTERRUPT
2894 *
2895 *
003631 2896 GSPNT NULL X4=I/O ENTRY OFFSET WHICH IS GESPECED

```

EXIT2 = GESPEC ACTION (TGSPC)

```

2897 *
2898          INHIB  ON
003631 020000 2352 07 000 2899          LDA      .FSPEC,DL
003632 100000 6553 14 000 2900          ERSA    0,4,P,IOQ      RESET GESPEC FLAG
003633 701401 2233 12 000 2901          LDX3    .CRCT2,2,P,CR    LOOK FOR MORE FROM START OF QUEUE
003634 020000 2352 07 000 2902          LDA      .FSPEC,DL
003635 003001 3362 07 000 2903          LCQ     =03001,DL      =0777777747777
                003636 2904 GSMOR  NULL
003636 000300 5002 00 000 2905          RPL     0,TZE          ARE THERE ANY GESPECS LINKED ?
003637 100000 2113 13 000 2906          CMK     0,3,P,IOQ
003640 003645 6072 00 010 2907          TTF     MRSM          YES DONT FLAG IN SCT
003641 100000 2203 13 000 2908          LDX0    0,3,P,IOQ
003642 003636 6012 00 010 2909          TNZ     GSMOR          TALLY EXHAUSTED,NO MORE
003643 000200 2352 03 000 2910          LDA      .FSPLK,DU      SPECIAL LINKED FLAG
003644 701400 6553 12 000 2911          ERSA    .CRCT1,2,P,CR    RESET GESPEC--LINKED FLAG IN SCT
2912 *
2913 *
2914 *I/O ENTRY WHICH WAS GESPECED CAN BE STARTED IMMEDIATELY
2915 *          .CRQGT IS STILL SHUT FOR STGPC (STIO)
2916 *
                003645 2917 MRSM  NULL
003645 400001 3352 07 000 2918          LCA     .FSPRM+1,DL      RESET THE REMEMBERED SPEC FLAG
003646 701200 3553 11 000 2919          ANSA    .CRI01,1,P,CR    IN CASE PRINTER RUN AWAY
003647 777777 2352 03 000 2920          LDA     -1,DU
003650 701200 3153 11 000 2921          CANA    .CRI01,1,P,CR
003651 003626 6012 00 010 2922          TNZ     OPQGT          CHANNEL IS BUSY
003652 200000 2352 03 000 2923          LDA     .FTAD,DU
003653 100004 3153 14 000 2924          CANA    .WESCT,4,P,IOQ    IS IT T&D ?
003654 003674 6012 00 010 2925          TNZ     MRSM3          YES,START THIS ENTRY
003655 000002 2352 07 000 2926          LDA     .FTDRS,DL
003656 701400 3153 12 000 2927          CANA    .CRCT1,2,P,CR    IS THIS CHAN RESERVED TO T&D
003657 003626 6012 00 010 2928          TNZ     OPQGT          YES, DON'T START IT
003660 000001 2352 07 000 2929          LDA     .FSTCH,DL
003661 701400 3153 12 000 2930          CANA    .CRCT1,2,P,CR    CHAN STOP ?
003662 003674 6002 00 010 2931          TZE     MRSM3          NO
003663 000001 2232 03 000 2932          LDX3    1,DU
003664 100011 3033 14 000 2933          CANX3   .WEFCM,4,P,IOQ    DID THIS I/O ENTRY STOP THE CHANN
003665 003671 6002 00 010 2934          TZE     MRSM4          NO
003666 100011 6433 14 000 2935          ERSX3   .WEFCM,4,P,IOQ    CLEAR BIT THAT STOPPED CHAN
003667 701400 6553 12 000 2936          ERSA    .CRCT1,2,P,CR    TURN OFF IT
003670 003674 7102 00 010 2937          TRA     MRSM3          GO START THIS ENTRY
2938 *
                003671 2939 MRSM4  NULL
003671 006000 2352 07 000 2940          LDA     .FREIS+.FSGPR,DL
003672 100005 3153 14 000 2941          CANA    .WEPEP,4,P,IOQ    IS IT SPECIAL GEPR OR GEPR REISSU
003673 003626 6002 00 010 2942          TZE     OPQGT          NO
2943 *
                003674 2944 MRSM3  NULL
003674 007707 7032 00 010 2945          TSX3    STGPC          .CRQGT IS OPEN WHEN RETURN IS MAD
2946 *          X5 & X6 WERE DESTORYED

```

EXIT2 = GESPEC ACTION (TGSPC)

003675 000666 7100 00 010

2947 *
2948
2949
2950 *
2951 *

INHIB OFF
TRA GTCHN

LOOK FOR MORE INTERRUPT

EXIT4 = TEST FOR SPECIAL COMMAND -- FREE CHANNEL

2953 *
 2954 * REGISTERS CONVENTION
 2955 *
 2956 * X1 = TCX
 2957 * X2 = LPCX
 2958 * X4 = I/O ENTRY OFFSET WHICH JUST TERMINATED
 2959 * X7 = PROCESSOR #
 2960 *
 2961 * ODR1 =P.IOQ (TYPE=0)
 2962 * ODR3 =
 2963 * ODR6 =P.SSA
 2964 * ODR7 =P.CR
 2965 *
 2966 * GATE IS OPEN
 2967 *
 2968 SSPCM NULL
 2969 LDA .FSCMS,DL
 2970 CANA .WESCT,4,P.IOQ
 2971 TZE TRLC1
 2972 ERSA .WESCT,4,P.IOQ
 2973 TRA SPCMD
 2974 *

003676 000001 2350 07 000
 003677 100004 3151 14 000
 003700 003451 6000 00 010
 003701 100004 6551 14 000
 003702 003443 7100 00 010

IS SPECIAL CMD BIT ON ?
 NO, DON'T BOTHER TO RELEASE IT
 TURN IT OFF
 RELEASE CHANNEL

IOS01330

EXITS = MT SI ,GO START I/O

2976 *
 2977 * REGISTERS CONVENTION
 2978 *
 2979 * X2 = LPCX
 2980 * X7 = PROCESSOR#
 2981 *
 2982 * ODR1 =P.IOQ (TYPE=0)
 2983 * ODR3 =
 2984 * ODR6 =P.SSA
 2985 * ODR7 =P.CR
 2986 *
 2987 *
 2988 INHIB ON
 2989 MTSI NULL
 2990 .SHUT .CRQGT,,P.CR
 2991 *
 2992 TSX3 STIO
 2993 TRA GTCHN
 2994 *
 2995 INHIB OFF
 2996 *

003703
003703

003706 007347 7032 00 010
003707 000666 7102 00 010

ATTEMPT TO START I/O
LOOK FOR MORE INTERRUPT

EXIT7 = REISSUE CONSOLE READ

2998 *
 2999 * REGISTERS CONVENTION
 3000 *
 3001 * X1 = TCX
 3002 * X2 = LPCX
 3003 * X4 = I/O ENTRY OFFSET
 3004 * X6 = KPX
 3005 * X7 = PROCESSOR #

003710

3006 *
 3007 *
 3008 TREAD NULL
 3009 *
 3010 * Q-REG. HAS PMX IMAGE
 3011 *
 3012 *

003710

3013 INHIB ON
 3014 .SHUT .CRQGT,P.CR

EL8.

003713 007665 7032 00 010
 003714 000666 7102 00 010

3015 *
 3016 TSX3 TYPER ST10
 3017 TRA GTCHN
 3018 *
 3019 *

EXIT8 = ERROR THRESHOLD

3021 *
 3022 * CHAN MOD EP1 HAS DETERMINED THAT ERROR THRESHOLD HAS BEEN
 3023 * EXCEEDED ON THE DEVICE
 3024 * THRESHOLD STATUS IS SET IN .WEST OF I/O ENTRY
 3025 * I/O ENTRY DOESN'T REQUIRE GEPR ACTION OTHER THAN THRESHOLD MSG

3026 *
 3027 * REGISTERS CONVENTION

3028 *
 3029 * X1 = TCX
 3030 * X2 = LPCX
 3031 * X4 = I/O ENTRY OFFSET
 3032 * X6 = KPX OF I/O ENTRY
 3033 * X7 = PROCESSOR#

3034 *
 3035 * ODR1 =P.IOQ (TYPE 0)
 3036 * ODR3 =
 3037 * ODR6 =P.SSA FOR POP
 3038 * ODR7 =P.CR

3039 *
 3040 *

003715 100000 2363 14 000
 003716 000050 3762 07 000
 003717 003470 7102 00 010

003715

3041 TERRT NULL
 3042 LDQ .WEST,4,P.IOQ
 3043 ANQ .FMTDM+.FEXRQ,DL
 3044 TRA LOADA

GET I/O STATUS
 SAVE TAPE MSG AND EXCHG INF.
 OFF TO GEPR EXIT

3045 *
 3046 *

003720

3047 MISEND NULL

EP6 = EXTENDED MEMORY LINK/LINKF

			3049 *				IOS04600
			3050 *	X6= KPX			IOS04610
			3051 *	X7= CPUNO			IOS04615
			3052 *	P2= PTR TO SHADOW I/O ENTRY (.WESCT - .WEEND)			IOS04620
			3053 *	P6= P.SSA			IOS04625
			3054 *	P7= P.CR			IOS04630
			3055 *				IOS04635
		000010	3056	.FEXTM BOOL	10	BIT 32 IS EXTENDED MEMORY FLAG	IOS04640
			3057				IOS04645
		000002	3058	P.PAT SET	P2	PAT DESCRIPTOR REGISTER	IOS01300
003720	600005	2353 00 000	3059	EXTMEM LDA	.SATTR,P.SSA	GET ATTRIBUTE WORD	IOS01310
003721	004000	3152 03 000	3060		CANA .AEXTM,DU	IS EXTM ALLOWED	IOS01320
003722	003775	6002 00 010	3061		TZE NEXTM	NO, ABORT PROCESS	IOS01330
003723	200000	6337 00 000	3062		EPPR P3,0,P2	YES, MOVE P2 TO P3	IOS01340
003724	006204	4726 07 000	3063		LDP P.PAT,SD,PSH,DL		IOS01350
003725	200002	6727 00 000	3064		LDD P.PAT,PH.PAT,P.PAT	GET PAT DESCRIPTOR	IOS01360
003726	300001	2203 00 000	3065		LDX0 1,P3	GET FILE CODE PTR	IOS01370
003727	200000	2233 10 000	3066		LDX3 0,0,P.PAT	FILE CODE WORD	IOS01380
003730	037777	3632 03 000	3067		ANX3 .FPTOF,DU	PAT BODY PTR	IOS01390
003731	037777	1032 03 000	3068		CMPX3 .FADJ,DU	IS IT SPECIAL	IOS01400
003732	000002	6012 04 000	3069		TNZ 2,IC	NO	IOS01410
003733	000003	6232 10 000	3070		EAX3 .OFFS,0	YES, ADJUST IT	IOS01420
003734	200000	2203 13 000	3071		LDX0 0,3,P.PAT	GET SCT PTR	IOS01430
003735	003774	3602 03 000	3072		ANX0 .FCHNX,DU		IOS01440
003736	700000	7223 10 000	3073		LXL2 0,0,P.CR	SCT PTR	IOS01450
003737	003774	3622 03 000	3074		ANX2 .FCHNX,DU		IOS01460
003740	300002	2363 00 000	3075		LDQ 2,P3	GET SEEK ARGUMENT	IOS01470
003741	003747	6252 00 010	3076		EAX5 EXT2	SEEK RETURN	IOS01480
003742	777777	4112 03 000	3077		LDE -1,DU	SKWPT FLAG	EL8.
003743	300006	7203 00 000	3078		LXL0 6,P3	LINK/RANDOM FLAG	IOS01490
003744	011206	6042 00 010	3079		TMI MSCSK	EP39 SEEK CALC	EL8.
003745	300000	4112 03 000	3080		LDE =0300000,DU	MSKWPT FLAG	EL8.
003746	011206	7102 00 010	3081		TRA MSCSK	EP40 SEEK CALC	EL8.
			3082 *				IOS01520
003747	012426	7102 00 010	3083	EXT2 TRA	EP39N+1	BAD SEEK ADDRESS	IOS01530
003750	300002	7563 00 000	3084		STQ 2,P3	SAVE S.A.	IOS01540
003751	300000	7403 00 000	3085		STX0 0,P3	UPDATE SCT PTR	IOS01550
003752	012477	7002 00 010	3086	EXT3 TSX0	QUEUE	GET AN I/O ENTRY	IOS01560
003753	000000	6242 14 000	3087		EAX4 0,4	DID WE GET ONE	IOS01570
003754	003772	6002 00 010	3088		TZE EXT4	NO, WAIT	IOS01580
003755	001761	4716 07 000	3089		LDP P.IOQ,CTYP,DL	YES, SET T=0	IOS01590
003756	100000	6307 14 000	3090		EPPR P0,0,4,P.IOQ		IOS01600
003757	000100	1007 00 000	3091		MLR (1),(1)	MOVE SHADOW ENTRY	IOS01610
003760	300000	0001 00 000	3092		ADSC9 0,0,64,P3	FROM USER	IOS01620
003761	000004	0001 00 000	3093		ADSC9 .WESCT,0,64,P0	TO I/O ENTRY	IOS01630
003762	002030	2352 07 000	3094		LDA .FEXTM+.FEXTC+.FFDD1,DL	EXTM FLAGS	14FW1480
003763	100012	3753 14 000	3095		ANA .WEEP2,4,P.IOQ		ANON2110
003764	100001	2553 14 000	3096		ORSA .WEPRV,4,P.IOQ		IOS01650
003765	012432	6362 00 010	3097		EAQ EP39E+1	SET LINK RETURN	IOS01660
003766	100012	2353 14 000	3098		LDA .WEEP2,4,P.IOQ		IOS01670

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

3110
 3111 *LINK LINK I/O ENTRY AT END OF I/O QUEUE, INCREASE REQUEST COUNT
 3112 *
 3113 *LINKF LINK I/O ENTRY AT BEGINNING OF I/O QUEUE, INCREASE REQUEST COUNT
 3114 *
 3115 *ALL ENTRIES AFTER I/O ENTRY IS LINKED, START I/O IF POSSIBLE.
 3116 *
 3117 *LINKS SET BIT 0 OF I/O ENTRY WORD 2, AND .SNTRY AFTER LINKF TO
 3118 * PREVENT PUSH-DOWN. SPECIAL LINK.
 3119 *

3120 *INPUT

3121 *

3122 *

X4= ADDRESS OF I/O ENTRY

3123 *

X6= KPX

3124 *

X7= CPUNO

3125 *

ODR1 = P.IOQ I/O ENTRY DESCRIPTOR

3126 *

ODR2 = P.PAT PAT SEGMENT DESCRIPTOR

3127 *

ODR6 = P.SSA

3128 *

ODR7 = P.CR

3129 *

3130 *OUTPUT

RETURN TO CALLER, I/O ENTRY HAS BEEN LINKED,

3131 *

MAY HAVE BEEN STARTED.

3132 *

LINK AND LINKF ENTRIES WILL ZERO STATUS RETURN WORD 1

3133 *

WHEN I/O ENTRY IS LINKED.

3134 *

3135 *

3136

000002

3137 P.PAT SET

P2

PAT SEGMENT DESCRIPTOR

3138

3139

3140

3141

L I N K S E X T E R N A L E N T R Y

RDSP2510

3142

RDSP2520

003777 400000 2352 03 000

3143 EP29 LDA

.FSLNK,DU

RDSP2530

004000 100004 2553 14 000

3144 ORSA

.WESCT,4,P.IOQ SET SYSTEM I/O BIT

RDSP2540

3145 *

TRA

EP28

RDSP2550

3146

RDSP2560

3147

RDSP2570

3148

L I N K F E X T E R N A L E N T R Y

RDSP2580

3149

RDSP2590

004001 000000 4112 03 000

3150 EP28 LDE

0,DU

LIFO FLAG

RDSP2600

004002 004004 7102 00 010

3151 TRA

EP3+1

RDSP2610

3152

RDSP2620

3153

RDSP2630

3154

L I N K E X T E R N A L F L A G

RDSP2640

3155

RDSP2650

004003

3156 EP2 NULL

RDSP2660

004003 200000 4112 03 000

3157 EP3 LDE

64*1024,DU

LIFO FLAG

RDSP2670

004004 004015 6362 00 010

3158 EAQ

LNKRET

SET RETURN

RDSP2680

004005 000000 6242 14 000

3159 EAX4

0,4

IS X4 KOSHER

IOS04ASR

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

004006	004256	6002	00	010	3160	TZE	ZOPX4	NO, TILT	IOS04A5R
004007	014047	2352	00	010	3161	LDA	=0310C00240002		RDSP2690
004010	100011	1153	14	000	3162	CMPA	.WEFCM,4,P.I0Q	IS COMMAND WDIC	RDSP2700
004011	004025	6002	00	010	3163	TZE	LINK+1	YES, LINK IT	RDSP2710
004012	000001	2352	07	000	3164	LDA	.FBT35,DL	NO	RDSP2720
004013	100005	2553	14	000	3165	ORSA	.WEPEP,4,P.I0Q	SET CCAC FLAG	RDSP2730
004014	004025	7102	00	010	3166	TRA	LINK+1		RDSP2740
					3167				
					004015	3168	LNKRET	NULL	RETURN FROM LINK ROUTINE
					004015	3169	.EXIT		
							INHIB	SAVE,ON	
004015	000002	6306	04	4017		EPPRO	*+2,\$		
004016	700006	7103	00	000		TRA	.CREXT,,P.CR		
004017	000000	000000	000			ZERO	.RG,		
						INHIB	RESTORE		
					3170				
					3171				
					3172				
					3173				
					3174				
004020	400000	2352	03	000	3175	LINKS	LDA	.FSLNK,DU	
004021	100004	2553	14	000	3176		ORSA	.WESCT,4,P.I0Q	SET BIT #0 I/O ENTRY WORD #2
					3177	*			
004022	000000	4112	03	000	3178	LINKF	LDE	0,DU	SET LIFO FLAG
004023	004025	7102	00	010	3179		TRA	LINK+1	IOS05375
					3180				IOS05380
004024	200000	4112	03	000	3181	LINK	LDE	64*1024,DU	SET FIFO FLAG
004025	600221	4503	00	000	3182		STZ	.SVFLT,,P.SSA	CLEAR FAULT FLAG
					3183	*			IOS05385
					3184	*	TEST FOR	FILSYS FOR PROTECTED FILES	IOS05390
					3185	*			IOS01040
004026	700726	2343	00	000	3186	SZN	.CRFSX,,P.CR	IS FSEX ACTIVE	EL8.
004027	004132	6002	00	010	3187	TZE	NFSEX	NO	EL8.
004030	100004	2353	14	000	3188	LDA	.WESCT,4,P.I0Q	TEST DEVICE TYPE, IS DISC	
004031	017774	3752	03	000	3189	ANA	.FSCT1,DU	SCT ADDRESS	
004032	700000	2343	01	000	3190	SZN	0,AU,P.CR		
004033	004132	6052	00	010	3191	TPL	NFSEX	NON DISC DEVICE	
004034	100005	2203	14	000	3192	LDXO	.WEPEP,4,P.I0Q	TEST PAT, IS PROTECTED	
004035	004132	6002	00	010	3193	TZE	NFSEX	NO PAT REQUEST	
004036	200000	2353	10	000	3194	LDA	0,0,P.PAT	GET PAT BODY PTR	IOS04425
004037	037777	3752	03	000	3195	ANA	.FPTOF,DU	UNMASK IT	IOS04430
004040	037777	1152	03	000	3196	CMPA	.FADJ,DU	IS BODY ADJACENT	IOS04435
004041	000002	6012	04	000	3197	TNZ	2,IC	NO	IOS04440
004042	000003	6352	10	000	3198	EAA	.OFFS,0	YES, SET PAT BODY PTR	IOS04445
004043	200002	2343	01	000	3199	SZN	2,AU,P.PAT	IS FILE PROTECTED	IOS04450
004044	004132	6052	00	010	3200	TPL	NFSEX	NOT PROTECTED	
					3201	*	FILE IS PROTECTED		
004045	600012	7563	56	000	3202	STQ	.SSA,ID,P.SSA	SAVE LINKAGE	XXXX3200
					004046	3203	.CALL	.MFSEX,1	CALL FMS
						INHIB	SAVE,ON		

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

004046	000003	6306	04	4051		EPRO	++3,\$			
004047	700002	7103	00	000		TRA	.CRCAL,,P.CR			
004050	000201	000001	000			ZERO	.MFSEX,1			
						INHIB	RESTORE			
004051	004362	7102	00	010	3204	TRA	FMSRET	RETURN STATUS		
004052	004056	7102	00	010	3205	TRA	FNRML			IOS0C330
004053	006145	4766	07	000	3206	USRET LDP	P.SSA,SD.SSA,DL	RESTORE SSA DESCR		IOS00340
004054	600012	2363	54	000	3207	LDQ	.SSA,DI,P.SSA	RESTORE LINKAGE		XXXX3220
004055	000000	7102	02	000	3208	TRA	0,QU	RETURN		IOS00370
		004056			3209	FNRML	NULL			IOS00380
					3210	*				
004056	006204	4706	07	000	3211	LDP	PO,SD.PSH,DL	NORMAL RETURN		
004057	000002	6727	00	000	3212	LDD	P.PAT,PH.PAT,,PO	RE-GET P.PAT MAY BE DESTROYED		
004060	006145	4766	07	000	3213	LDP	P.SSA,SD.SSA,DL	RELOAD SSA DESCRIPTOR		IOS00180
004061	006013	4716	07	000	3214	LDP	P.IOQ,SD.IOQ,DL			
004062	001761	4716	07	000	3215	LDP	P.IOQ,,CTYP,DL	RE-GET P.IOQ MAY BE DESTROYED		
004063	600012	2363	54	000	3216	LDQ	.SSA,DI,P.SSA			XXXX3240
004064	004132	7102	00	010	3217	TRA	NFSEX			29FW0430
					3218	*				29FW0440
					3219	*	BUFFER MANAGER PROTECTED FILE			29FW0450
					3220	*				29FW0460
004065	001764	4706	07	000	3221	FSBFM LDP	PO,.SSR,DL			IOS04AAM
004066	001761	4706	07	000	3222	LDP	PO,.CTYP,DL	T=0		IOS04AAM
004067	100001	7203	14	000	3223	LXLO	.WEPRV,4,P.IOQ			29FW0500
004070	400000	3002	03	000	3224	CANXO	.FFIOR,DU	TEST MME/PMME		29FW0510
004071	004100	6012	00	010	3225	TNZ	MME	GEINOS		EL7.
004072	000010	7203	00	000	3226	LXLO	.WISR,,PC	CALLIO, GET ISR DESCR		IOS04AAM
004073	000160	3602	03	000	3227	ANXO	=0160,DU	WSR#		29FW0540
004074	000140	1002	03	000	3228	CMPXO	6*16,DU	IS IT 6/7		29FW0550
004075	004515	6022	00	010	3229	TNC	NOBM	NO, DO THE I/O		EL8.
004076	000047	2362	07	000	3230	LDQ	.AC047,DL	K1 - INVALID I/O REQUEST		EL8.
004077	005403	7102	00	010	3231	TRA	INABT	ABORT CALLER		29FW0580
					3232	*				29FW0590
004100	000004	2203	00	000	3233	MME LDXO	.WICI,,PC	GET IC OF MME		IOS04AAM
004101	004131	7402	00	010	3234	STXO	PFV+3	TO VECTOR		29FW0610
004102	100001	7253	14	000	3235	LXL5	.WEPRV,4,P.IOQ	RESTORE CONTROL BITS		IOS04AAD
004103	006174	4726	07	000	3236	LDP	P2,SD.MME,DL			29FW0620
004104	004126	6306	00	010	3237	EPPR	PO,PFV			29FW0630
		004105			3238		.XCALL	.DR+P2,2,GEINOS,PFERR		29FW0640
						INHIB	SAVE,ON			
		004105				ICLIMB	.DR+P2,2,GEINOS,(EAXO,SLAVE)			
004105	000001	713400	000	000		VFD	18/GEINOS,09/713,1/1,1/0,1/0,6/M.			
004106	400400	401772	000	000		VFD	1/1,9/2-1,8/0,1/.N,1/.0,2/0,2/0,12/.DR+P2			
004107	000002	2312	00	000		RSW	2			
004110	000003	3752	07	000		ANA	3,DL			
004111	000000	6272	05	000		EAX7	0,AL			
						INHIB	RESTORE			
004112	777400	3002	03	000		CANXO	MAJ.ST,DU			
004113	004122	6012	00	010		TNZ	PFERR			
004114	100014	4503	14	000	3239	STZ	.WEICB,4,P.IOQ	NORMAL RETURN, I/O DONE		29FW0650

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

					3240	INHIB	ON		29FWC660
004115	004701	6202	00	010	3241	EAXO	IRETN		29FW0670
004116	003434	7532	37	010	3242	SREG	ALLREG,7*		29FW0680
004117	003434	2202	17	010	3243	LDXO	ALLREG,7		EL8.
004120	000007	7526	10	000	3244	STWS	7,0	SAVE WSR 4-7	EL8.
004121	003233	7102	00	010	3245	TRA	LNKCC	PAY CC IF ANY & RETRUN	29FW0690
					3246	*	ERROR RETURN FROM BUFFER MANAGER		29FW0700
004122	404100	2352	03	000	3247	PFERR	LDA	=0404100,DU	NO PROTECTION SPACE
004123	000000	2362	07	000	3248	LDQ	0,DL		29FW0710
004124	004701	6202	00	010	3249	EAXO	IRETN		29FW0730
004125	003036	7102	00	010	3250	TRA	STRET	RETURN STATUS, PAY CC & RETURN	29FW0740
					3251	*			29FW0750
004126	000000	177600		000	3252	PFV	CVEC	.DR+P.USER	USER SEGMENT
004127	000000	001774		010					29FW0760
004130	000004	710640		000	3253	VEC	.DR+P.USER,0,5,R	MME CALL SEQUENCE	29FW0770
004131	000000	001774		000					
					3254	*			
					3255	*			
					3256	NFSEX	NULL		
004132	004356	7532	37	010	3257	SREG	REGST,7*	SAVE ALL REGISTERS	29FW0790
004133	100004	2203	14	000	3258	LDXO	.WESCT,4,P.IOQ		
004134	200000	3002	03	000	3259	CANXO	.FTAD,DU	IS THIS A T&D I/O ENTRY	
004135	004153	6012	00	010	3260	TNZ	IOLNK	LINK THIS I/O	
004136	100011	2203	14	000	3261	LDXO	.WEFCM,4,P.IOQ		
004137	003774	3602	03	000	3262	ANXO	.FCHNX,DU	PRESELECTED CHAN. INDEX FROM I/O ENTRY	
004140	004153	6002	00	010	3263	TZE	IOLNK	NO INDEX PRESENT -- LINK THIS I/O	
004141	701203	7203	10	000	3264	LXLO	.CRI04,0,P.CR		
004142	003774	3602	03	000	3265	ANXO	.FCHNX,DU	LOGICAL CHAN. INDEX OF THIS TRUE CHAN	
004143	701400	7203	10	000	3266	LXLO	.CRCT1,0,P.CR		
004144	000002	3002	03	000	3267	CANXO	.FTDRS,DU	IS THIS CHAN. RESERVED FOR T&D	
004145	004153	6002	00	010	3268	TZE	IOLNK	NO, LINK THIS I/O	
004146	100004	7203	14	000	3269	LXLO	.WESCT,4,P.IOQ		
004147	000002	3002	03	000	3270	CANXO	.FPRSL,DU	IS ENTRY MARKED FOR PRESELECTED CHAN.	
004150	004373	6012	00	010	3271	TNZ	ABRT	YES, ABORT THIS USER	
004151	774000	2202	03	000	3272	LDXO	=0774000,DU		
004152	100011	3403	14	000	3273	ANSXO	.WEFCM,4,P.IOQ	CLEAR OUT PRESELECTED INDEX AND FLAG	
					3274	IOLNK	NULL		
					3275	LIMLK	NULL		
004153	100014	2343	14	000	3276	SZN	.WEICB,4,P.IOQ	COMMAND BLK.D DESCRIPTOR	
004154	004160	6002	00	010	3277	TZE	LRQCT	NO STATUS RETURN 'GEINOS'	
004155	006013	4706	07	000	3278	LDP	PO,SD,IOQ,DL		
004156	000014	6707	14	000	3279	LDD	PO,.WEICB,4,PO	GET DESC. FOR STATUS	
004157	000004	4503	00	000	3280	STZ	.IWST1,,PO	ZERO STATUS TO INDICATE ACCEPTANCE	
					3281	LRQCT	NULL		
004160	100005	2213	14	000	3282	LDX1	.WEPEF,4,P.IOQ	I/O ENTRY PAT POINTER	
004161	004164	6002	00	010	3283	TZE	++3	NO PAT, SYSTEM REQUEST	
004162	013324	7002	00	010	3284	TSXO	TYNAM	CHECK FOR SYSTEM CONSOLE	
004163	004367	7102	00	010	3285	TRA	CNSCT	CONSOLE SCT	
					3286	RETYN	NULL		
004164	100004	2213	14	000	3287	LDX1	.WESCT,4,P.IOQ	(1,0) USE ENTRY SCT	

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

004165	017774	3612	03	000	3288	ANX1	.FSCT1,DU		
004166	013354	7002	00	010	3289	TSX0	ILPCX	CALCULATE LOG. PRIM. CH. INDEX (X2)	
					3290			AR WILL CONTAIN SCT ENTRY	
					3291			RETURN 0, ABORT INVALID SCT	
004167	004374	7102	00	010	3292	TRA	ABEXT	RELEASE ENTRY AND POP STAK	
					3293				
004170	010000	3152	07	000	3294	CANA	.FMLTD,DL	IS IT MULTI-DEVICE	
004171	004174	6012	00	010	3295	TNZ	LRQCT1	YES	
004172	000000	2352	03	000	3296	LDA	0,DU	NO, SET ZERO LOG. DEVICE INDEX	
004173	004201	7102	00	010	3297	TRA	LTYPE		
					3298 *				
004174	000000	6352	11	000	3299	LRQCT1	EAA	0,1	
004175	000022	7712	00	000	3300	ARL	18	CALCULATE LOG. DEV. INDEX	
004176	701402	1353	12	000	3301	SBLA	.CRCT3,2,P.CR	DEVICE SCT - BEG OF CH SCTS	
004177	000026	7352	00	000	3302	ALS	22		
004200	007700	3752	03	000	3303	ANA	=07700,DU		
	004201				3304	LTYPE	.SHUT	.CRQGT,,P.CR	EL8.
004204	000001	1062	03	000	3305	CMPX6	.PNPOP,DU		IOS06585.
004205	000003	6002	04	000	3306	TZE	3,IC	DON'T ENABLE .PNPOP	EL8.
004206	000401	3362	07	000	3307	LCQ	.RIOTM+1,DL	MASK = 77777777377	
004207	600117	3563	00	000	3308	ANSQ	.SRQST,,P.SSA	CLEAR "I/O COMPLETED SINCE LAST .LINK	
004210	004355	7552	00	010	3309	STA	LOGDV	LOGICAL DEVICE INDEX	
004211	000001	2352	03	000	3310	LDA	1,DU	INCREASE REQUEST COUNT	
004212	600160	0553	00	000	3311	ASA	.SRQCT,,P.SSA		
004213	701400	7213	12	000	3312	LXL1	.CRCT1,2,P.CR	TRUE CHANNEL INDEX FOR PRIMARY CH.	
004214	003774	3612	03	000	3313	ANX1	.FCHNX,DU		
					3314 *				
004215	000100	2352	03	000	3315	LDA	.FSPRQ,DU	IS GESPEC REQUEST OUTSTANDING	
004216	701400	3153	12	000	3316	CANA	.CRCT1,2,P.CR		
004217	004243	6002	00	010	3317	TZE	LQUEU	NO, LINK I/O	
					3318 *				
					3319 *				
					3320 *				
004220	000001	1062	03	000	3321	CMPX6	.PNPOP,DU	IS THIS .PNPOP	
004221	004234	6002	00	010	3322	TZE	CNSL	YES	
004222	701400	2363	12	000	3323	LDQ	.CRCT1,2,P.CR	GET FIRST WORD OF SCT	
004223	770000	3762	03	000	3324	ANQ	.FDVTP,DU	ISOLATE DEVICE TYPE	
004224	300000	1162	03	000	3325	CMPQ	.DCONS*4096,DU	IS THIS CONSOLE	
004225	004243	6002	00	010	3326	TZE	LQUEU	YES	
004226	310000	1162	03	000	3327	CMPQ	.DSCC1*4096,DU	IS THIS SCC	
004227	004234	6012	00	010	3328	TNZ	CNSL	NO	
004230	006144	4706	07	000	3329	LDP	PO,SD,SNE,DL		
004231	000000	2363	16	000	3330	LDQ	,6,PO	GET SNUMB	
004232	014050	1162	00	010	3332	CMPQ	=HVIDEO?	VIDEO	
004233	004243	6012	00	010	3334	TNZ	LQUEU	NO	
					3335 *				
	004234				3336	CNSL	NULL		
004234	000300	2362	03	000	3337	LDQ	.FSPRG+,FSPLK,DU	SET REQUESTED AND LINKED	
004235	701400	2563	12	000	3338	ORSQ	.CRCT1,2,P.CR	IN SCT	
004236	701400	6553	12	000	3339	ERSA	.CRCT1,2,P.CR	TURN OFF REQUESTED	

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

					3340 *								
004237	020000	2352	07	000	3341	LDA	.FSPEC,DL	SET I/O ENTRY TO GESPECED					
004240	100000	2553	14	000	3342	ORSA	.WEST,4,P.IOQ						
004241	400001	3202	03	000	3343	LCXD	.FSLNK+1,DU						
004242	100004	3403	14	000	3344	ANSXD	.WESCT,4,P.IOQ	INSURE NO GESPEC SPECIAL LINK					
					3345 *								
		004243			3346	LQUEU	NULL	LINK I/O ENTRY TO CHANNEL QUEUE					
004243	000000	2202	03	000	3347	LDX0	0,DU						
004244	701401	2233	12	000	3348	LDX3	.CRCT2,2,P.CR						
004245	004257	6002	00	010	3349	TZE	LNEW	NO ENTRIES IN I/O QUEUE					
					3350 *								
					3351 *			I/O QUEUE HAS AT LEAST ONE MEMBER					
					3352 *								
004246	004200	6342	07	000	3353	LDI	=04200,DL	MASK OVERFLOW					IOS05415
004247	200000	4152	03	000	3354	ADE	64*1024,DU	TEST LIFO/FIFO FLAG					IOS05420
004250	004262	6142	00	010	3355	TEO	LFIFO	FIFO					IOS05425
					3356 *								
					3357 *			LINK I/O ENTRY AT BEGINNING OF QUEUE - LIFO					
					3358 *								
004251	701401	7443	12	000	3359	STX4	.CRCT2,2,P.CR	NEW FIRST ENTRY POINTER					
004252	100001	7443	13	000	3360	STX4	.WEPRV,3,P.IOQ	STORE BACKWARD POINTER IN SECOND ENTR					
004253	100000	7433	14	000	3361	STX3	.WEST,4,P.IOQ	STORE FORWARD POINTER IN FIRST ENTRY					
004254	100001	7403	14	000	3362	STX0	.WEPRV,4,P.IOQ	STORE BACKWARD POINTER IN FIRST ENTRY					
004255	004270	7102	00	010	3363	TRA	LOK						
					3364 *								IOS04A5R
		004256			3365	ZOPX4	ZOP 4	I/O QUE POINTER IS ZERO					IOS04A5R
					3366 *								
					3367 *			LINK I/O ENTRY INTO EMPTY QUEUE					
					3368 *								
004257	701401	7443	12	000	3369	LNEW	STX4 .CRCT2,2,P.CR	FORWARD POINTER TO ONLY ENTRY					
004260	100001	7403	14	000	3370	STX0	.WEPRV,4,P.IOQ	NEW ENTRY BACKWARD POINTER SET TO ZER					
004261	004266	7102	00	010	3371	TRA	LZFP	SET FORWARD POINTER ZERO TOO					
					3372 *								
					3373 *			LINK I/O ENTRY AT END OF QUEUE - FIFO					
					3374 *								
004262	701402	2233	12	000	3375	LFIFO	LDX3 .CRCT3,2,P.CR	CURRENT LAST ENTRY					
004263	004256	6002	00	010	3376	TZE	ZOPX4	ZERO, PACK IT IN					IOS04A5R
004264	100000	7443	13	000	3377	STX4	.WEST,3,P.IOQ	STORE FORWARD PTR. IN NEXT TO LAST EN					
004265	100001	7433	14	000	3378	STX3	.WEPRV,4,P.IOQ	STORE BACKWARD PTR. IN LAST ENTRY					
004266	100000	7403	14	000	3379	LZFP	STX0 .WEST,4,P.IOQ	STORE FORWARD POINTER IN LAST ENTRY					
004267	701402	7443	12	000	3380	STX4	.CRCT3,2,P.CR	INSERT NEW LAST POINTER					
					3381 *								
					3382 *			I/O ENTRY IS PHYSICALLY LINKED INTO I/O QUEUE					
					3383 *								
004270	013262	0112	00	010	3384	LOK	NOP	CHECK (TSX3 IF 57=0)					IOS04AAM
004271	100004	2343	14	000	3385	SZN	.WESCT,4,P.IOQ						
004272	004275	6052	00	010	3386	TPL	*+3	IS BIT 35 SET					
004273	000001	2352	07	000	3387	LDA	.TLNKS,DL	YES, SET BIT 0 .STATE					
004274	600017	2553	00	000	3388	ORSA	.STATE,,P.SSA						
004275	100000	7203	14	000	3389	LXL0	.WEST,4,P.IOQ						

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

004276	630000	3602	03	000	3390	ANX0	=0630000,DU	RESET ALL BUT STOP, SK,ST., TRANS, GE
004277	004355	2602	00	010	3391	ORX0	LOGDV	INSERT LOGICAL DEVICE NO.
004300	000002	2602	03	000	3392	ORX0	2,DU	LINKED I/O ENTRY STATUS
004301	100000	4403	14	000	3393	SXLO	.WEST,4,F.IOQ	
004302	004000	2352	07	000	3394	LDA	.FREIS,DL	
004303	100005	3153	14	000	3395	CANA	.WEPEP,4,P.IOQ	IS THIS GEPR REISSUE
004304	004314	6002	00	010	3396	TZE	NOSCT	NO
004305	100004	2233	14	000	3397	LDX3	.WESCT,4,P.IOQ	SCT
004306	017774	3632	03	000	3398	ANX3	.FSCT1,DU	
004307	010000	2352	07	000	3399	LDA	.FMLTD,DL	
004310	700000	3153	13	000	3400	CANA	0,3,P.CR	IS THIS A MULTIPLE DEVICE CHAN.
004311	004314	6002	00	010	3401	TZE	NOSCT	NO, DONT TURN OFF CHAN. STOP BIT
004312	000002	3352	07	000	3402	LCA	.FSTCH+1,DL	LDA =077777777776
004313	700000	3553	13	000	3403	ANSA	0,3,P.CR	RESET DEVICE SCT STOP BIT
		004314			3404	NOSCT	NULL	
					3405	*I/O ENTRY IS LINKED		
					3406	*I/O ENTRY STATUS SET, DEVICE NUMBER INSERTED.		
					3407	*		
					3408	*		
					3409	*REGISTERS WHEN CALLING STIO OR STGPC FROM LINK		
					3410	* X1= TRUE CHANNEL INDEX, WILL BE DESTROYED		
					3411	* X2= LOGICAL PRIMARY CHANNEL INDEX		
					3412	* X3= TRANSFER REGISTER		
					3413	* X4= I/O ENTRY		
					3414	* X6= PN, MAY BE DESTROYED		
					3415	* X7= PROC NO		
					3416	* .CRQGT IS SHUT		
					3417			
004314	020000	2352	07	000	3418	LDA	.FSPEC,DL	IS THIS GESPECED I/O
004315	100000	3153	14	000	3419	CANA	.WEST,4,F.IOQ	
004316	004332	6002	00	010	3420	TZE	LSTIO	NO, GO TRY TO START IT
					3421	*		
					3422	* THIS IS GESPECED ENTRY, CAN IT BE STARTED NOW		
					3423	*		
004317	400000	2362	07	000	3424	LDQ	.FSPRM,DL	IS THERE A REMEMBERED SPECIAL INT ON THIS CHANNEL
004320	701200	3163	11	000	3425	CANQ	.CRIO1,1,P.CR	
004321	004351	6002	00	010	3426	TZE	LOPEN	NO, RETURN TO USER, I/O CANT BE START YES, RESET AND START I/O
					3427	*		
					3428	*		
004322	701200	6563	11	000	3429	ERSQ	.CRIO1,1,P.CR	YES, RESET REMEMBERED BIT
004323	100000	6553	14	000	3430	ERSA	.WEST,4,P.IOQ	RESET GESPECED ENTRY
004324	000200	2362	03	000	3431	LDQ	.FSPLK,DU	RESET GESPEC LINKED
004325	701400	6563	12	000	3432	ERSQ	.CRCT1,2,P.CR	IN CHANNEL SCT
					3433	*		
004326	701200	2233	11	000	3434	LDX3	.CRIO1,1,P.CR	IS CHANNEL BUSY
004327	004351	6012	00	010	3435	TNZ	LOPEN	YES, LEAVE LINKED
004330	007707	7032	00	010	3436	TSX3	STGPC	START I/O
004331	004344	7102	00	010	3437	TRA	LTHRU	
		004332			3438	LSTIO	NULL	
004332	000400	2352	03	000	3439	LDA	.FSPOK,DU	IS THIS CHANNEL GESPECABLE

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

004333	701400	3153	12	000	3440	CANA	.CRCT1,2,P.CR		
004334	004343	6002	00	010	3441	TZE	LGIOM	NO	
004335	400001	3352	07	000	3442	LCA	.FSPRM+1,DL	YES FORGET ANY REMEMBERED	
004336	701400	2363	12	000	3443	LDQ	.CRCT1,2,P.CR	TEST DEVICE TYPE	
004337	770000	3762	03	000	3444	ANQ	.FDVTP,DU		
004340	310000	1162	03	000	3445	CMPQ	.DSCC1*4C96,DU	IS CONSOLE	
004341	004343	6002	00	010	3446	TZE	*+2	YES, SAVE OCCERED FLAG	
004342	701200	3553	11	000	3447	ANSA	.CRI01,1,P.CR	SPECIAL INTERRUPTS	
					3448	*			
		004343			3449	LGIOM	NULL		
004343	007347	7032	00	010	3450	TSX3	STIO	NO, CAN ANY I/O BE STARTED	
					3451				
					3452		*RETURN FROM STIO, RESTORE REGISTERS AND RETURN TO LINK CALLER		
					3453		*.CRQGT HAS BEEN OPENED IN STIO		
		004344			3454	LTHRU	NULL	GATE IS OPEN	
					3455				
004344	006133	4706	07	000	3456	LDP	PO,SD,KL,DL		
004345	004356	2202	17	010	3457	REG2	LDX0	REGST,7	LOCATE REGISTERS IOS05260
004346	000003	4472	10	000	3458		SXL7	3,0	SAVE PROC # IOS05265
004347	000000	0732	10	000	3459		LREG	0,0	RESTORE REGISTERS IOS05270
004350	000000	7102	02	000	3460		TRA	0,QU	RETURN IOS05275
					3461	*			
					3462				
		004351			3463		INHIB ON		
004353	004344	7102	00	010	3464	LOPEN	.OPEN	.CRQGT,,P.CR	
					3465		TRA	LTHRU	
					3466				
004354	000000000000			000	3467	LFORL	OCT	0	LINK LAST (ZERO) OR FIRST (NON-ZERO)
004355	000000000000			000	3468	LOGDV	OCT	0	
					3469	*			
004356	014130	000000		010	3470	REGST	ZERO	REGS	REGISTER STORAGE POINTERS IOS05290
004357	014140	000000		010	3471		ZERO	REGS+8	IOS05295
004360	014150	000000		010	3472		ZERO	REGS+16	IOS05300
004361	014160	000000		010	3473		ZERO	REGS+24	IOS05305
					3474	*			XXXX3270
004362	006145	4766	07	000	3475	FMSRET	LDP	P.SSA,SD,SSA,DL	XXXX3280
004363	600012	2363	54	000	3476		LDQ	.SSA,DI,P.SSA	XXXX3290
004364	004356	7532	37	010	3477		SREG	REGST,7*	XXXX3300
004365	003036	7002	00	010	3478		TSX0	STRET	IOS00300
004366	004345	7102	00	010	3479		TRA	REG2	IOS00310
					3480	*			
					3481	*	EXCHANGE COSOLE SCT POINTER		
					3482	*			
		004367			3483	CNSCT	NULL		
004367	760003	2202	03	000	3484		LDX0	=0760003,DU	= -.FSCT1-1
004370	100004	3403	14	000	3485		ANSX0	.WESCT,4,P.IOQ	SAVE SPECIAL BITS
004371	100004	2413	14	000	3486		ORSX1	.WESCT,4,P.IOQ	AND SET NEW SCT ADDRESS
004372	004164	7102	00	010	3487		TRA	RETYN	
					3488	*			
					3489	*			

C2 EP28= LINK, EP2= LINKF, EP3= LINKR, EP29= LINKS

					3490 *						
					3491 *						
004373	000164	2362	07	000	3492	ABRT	LDQ	.AC164,DL	PRESELECT CHANNEL INACTIVE		ITP.1720
					3493 *						EL8.
					3494	ABEXT	NULL				ITP.1740
					3495		LDX3	.WEPEP,4,P.I0Q			
004374	100005	2233	14	000	3496		TZE	**3	NO PAT REQUEST		
004375	004400	6002	00	010	3497		LCA	=0100001,DL	LDA =0777777677777		
004376	100001	3352	07	000	3498		ANSA	0,3,P.PAT	RELEASE PAT IF BUSY		
004377	200000	3553	13	000	3499						
					3500 *						
004400	013400	7002	00	010	3501		TSX0	UNWIRE	CALL UN-WIRE SUBROUTINE		
					3502 *						
					3503						
004401	004356	2202	17	010	3504	REG3	LDX0	REGST,7			IOS05435
004402	000005	7562	10	000	3505		STQ	5,0	SET REASON CODE		ITP.1830
004403	000003	4472	10	000	3506		SXL7	3,0	SAVE PROC #		IOS05440
004404	000000	0732	10	000	3507		LREG	0,0			IOS05445
004405	005403	7102	00	010	3508		TRA	INABT			
					3509		INHIB	OFF			

C2 EP4 QUEUE (REQUEST TO ASSIGN I/O ENTRY SPACE)

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3511
3512 * INPUT FOR EP4 ROUTINE
3513 * ODR6= P.SSA
3514 * ODR7= P.CR
3515 * X6= KPX
3516 * X7= CPUNO
3517 * FUNCTION
3518 * ASSIGN ONE "BUILDING" I/O ENTRY
3519 * ZERO USER FILLED AREA
3520 *
3521 * OUTPUT
3522 * IF X4=0, NO ENTRY SPACE AVAILABLE
3523 * IF X4 NOT =0, =OFFSET TO ASSIGNED ENTRY
3524 *
3525 * .CRQGT IS NOT SHUT IN QUEUE
3526 *
004406 3527 EP4 NULL
3528 *
3529 * CALL QUEUE SUBROUTINE
3530 *
004406 012477 7000 00 010 3531 * TSX0 QUEUE
3532 *
3533 * RETURN TO CALLER
3534 *
004407 3535 * .EXIT 0,(X4,P1) RETURN REGISTERS
3536 * INHIB SAVE,ON
EPPRO *+2,$
TRA .CREXT,,P.CR
ZERO .RG,0
INHIB RESTORE

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***EPS INOS (REQUEST FOR I/O VIA MME GEINOS)

3538 *INOS ENTERED VIA A MME GEINOS .
 3539 *
 3540 * SELECT SEQUENCE FOR INOS CAN BE OF TWO FORMS
 3541 *
 3542 * I/O COMMAND
 3543 * ZERO FILE POINTER, DCW POINTER
 3544 * ZERO STATUS RETURN POINTER, COURTESY CALL ADDRESS
 3545 * OR
 3546 * I/O COMMAND 1
 3547 * ZERO FILE POINTER, DCW POINTER 1
 3548 * I/O COMMAND 2
 3549 * ZERO FILE PTR OR NULL, DCW POINTER 2
 3550 * ZERO STATUS RETURN POINTER, COURTESY CALL ADDRESS
 3551 *
 3552 * THE 5-WORD SELECT SEQUENCE IS IDENTIFIED BY
 3553 * A UNIT RECORD TRANSFER IOM COMMAND WITH A RECORD COUNT
 3554 * OF (02)8.
 3555 *
 3556 * ALL POINTERS IN THE SELECT SEQUENCE ARE
 3557 * OFFSETS TO THE PROCESS LAL
 3558 *
 3559 * REGISTERS FOR A MME GEINOS CALL ARE SAVED
 3560 * AND RESTORED.
 3561 *
 3562 * INOS USES THE FOLLOWING .STEMP CELLS
 3563 * .STEMP,+1,+2,+3
 3564 *
 3565 * THE MME PROCESSOR SET THE FOLLOWING
 3566 * REGISTERS WHEN TRANSFERRING CONTROL TO INOS
 3567 * X6= KPX
 3568 * X7= CPUNO
 3569 * ODR4= P.USER
 3570 * X5 = ADDRESS OF MME+1 OF P.USER SEGMENT
 3571
 3572
 3573

	000002	3574 P.PAT	SET	2		IOS01835
	004412	3575 FBUSY	.ARELC			IOS01840
	004412		.CALLX	.MDISP,4,N		
	004412		INHIB	SAVE,ON		
004412	005704713400		ICLIMB	SD.SVX,,.MDISP*64+4,EAXO		
004413	000000606122		VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.		
			VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX		
			INHIB	RESTORE		
		3576				IOS01845
	004414	3577 INOS	NULL			
004414	005426 6304 00 010	3578	EPPR	PO,FLTIO		IOS01855
004415	600221 4505 00 000	3579	STP	PO,.SVFLT,,P.SSA	SET VICARIOUS FLAG	IOS01860
004416	400001 2211 13 000	3580	LDX1	1,3,P.USER	GET FILE POINTER	IOS01865
004417	005422 6000 00 010	3581	TZE	INAI5	NULL, IS ABORT	IOS01870

***EP5 INOS (REQUEST FOR I/O VIA MME GEINOS)

004420	600207	4431	00	000	3582	SXL3	.STEMP+3,,P.SSA	SAVE CALL IC	IOS01875
004421	400000	2351	11	000	3583	LDA	0,1,P.USER	GET FILE CODE WORD	IOS04AAM
004422	600205	4411	00	000	3584	SXL1	.STEMP+1,,P.SSA	SAVE FILE POINTER	IOS01885
004423	600210	7551	00	000	3585	STA	.STEMP+4,,P.SSA	& FILE CODE	IOS01890
004424	400000	2750	03	000	3586	ORA	.FBTO,DU	SET MME GEINOS FLAAG	IOS01895
004425	013100	7010	00	010	3587	TSX1	FNDFC	GET PAT POINTER	IOS01900
004426	005420	7100	00	010	3588	TRA	INAI3	NOT PRESENT, ABORT I3	IOS01905
					3589	*			
004427	200000	2351	12	000	3590	LDA	0,2,P.PAT	GET PAT POINTER WORD	
004430	100000	3150	07	000	3591	CANA	.FBSYF,DL	IS FILE BUSY	
004431	004412	6010	00	010	3592	TNZ	FBUSY	YES, WAIT	IOS01915
004432	600204	7421	00	000	3593	STX2	.STEMP,,P.SSA	FILE CODE OFFSET	IOS06900
004433	000000	6220	01	000	3594	EAX2	0,AU	PAT OFFSET	
004434	037777	3620	03	000	3595	ANX2	.FPTOF,DU	GET PAT BODY OFFSET	
004435	200000	2211	12	000	3596	LDX1	0,2,P.PAT	SCT ADDRESS	
004436	005420	6000	00	010	3597	TZE	INAI3	PRIMARY FILE WAS RELEASED, ABORT I3	
004437	017774	3610	03	000	3598	ANX1	.FSCT1,DU	AND OUT PAT FLAG	
004440	600205	4421	00	000	3599	SXL2	.STEMP+1,,P.SSA	SAVE PAT OFFSET	
		004441			3600		.QUEUE		
004441	012477	7000	00	010		TSX0	QUEUE		
					3601			X4 CONTAINS ENTRY ADDRESS	
004442	000000	1040	03	000	3602	CMPX4	0,DU		
004443	004412	6000	00	010	3603	TZE	FBUSY	WAIT FOR ENTRY	IOS01945
					3604	*			
					3605	*			
					3606	*			
					3607	*			
					3608	*			
					3609				
					3610				
					3611				
								START FILLING I/O ENTRY	
004444	001761	4714	07	000	3612	LDP	P.IOQ,,CTYP,DL	CHANGE TYPE TO ZERO	
004445	100024	0545	14	000	3613	STD	P.USER,,WEEND,4,P.IOQ	SAVE USER DESCRIPTOR	IOS01955
004446	600204	2201	00	000	3614	LDX0	.STEMP,,P.SSA	RESTORE PAT POINTER OFFSET	
004447	100005	7401	14	000	3615	STX0	.WEPEF,4,P.IOQ	PAT POINTER	
004450	100004	7411	14	000	3616	STX1	.WESCT,4,P.IOQ	SCT ADDRESS	
004451	600205	7201	00	000	3617	LXLO	.STEMP+1,,P.SSA	SAVE PAT BODY OFFSET	IOS01965
004452	100024	4401	14	000	3618	SXLO	.WEEND,4,P.IOQ	IN ENTRY	IOS01970
004453	400000	2350	07	000	3619	LDA	.FFIOR,DL	SET .WEPRV LOWER FLAG BITS	
004454	001764	4704	07	000	3620	LDP	PO,,SSR,DL	CALL FROM GEINOS	
004455	001761	4704	07	000	3621	LDP	PO,,CTYP,DL	CHANGE TYPE TO ZERO	
004456	000004	2361	00	000	3622	LDQ	.WICI,,PC		
004457	000200	3160	07	000	3623	CANQ	=0200,DL		
004460	004462	6010	00	010	3624	TNZ	++2		
004461	200000	2750	07	000	3625	ORA	.FFMOD,DL	MASTER MODE	
004462	600210	7201	00	000	3626	LXLO	.STEMP+4,,P.SSA	GET RELQ/ROAD FLAGS	IOS01980
004463	600000	3600	03	000	3627	ANX0	=060000,DU	ISOLATE THEM	IOS01985
004464	004471	6000	00	010	3628	TZE	SETFBT	NULL	IOS01990
004465	004470	6040	00	010	3629	TMI	SETFBT-1	ROADBLOCK	IOS01995
004466	020000	2750	07	000	3630	ORA	.FFRLC,DL	RELINQUISH	IOS02000

***EP5 INOS (REQUEST FOR I/O VIA MME GEINOS)

004467	004471	7100	00	010	3631	TRA	SETFBT			
004470	010000	2750	07	000	3632	ORA	.FFROCD,DL			IOS02005
	004471				3633	SETFBT	NULL			IOS02010
004471	100001	7551	14	000	3634	STA	.WEPRV,4,P.IOQ	SET FLAG BIT		
					3635	*				
004472	013354	7000	00	010	3636	TSX0	ILPCX	CALCULATE INDEX		
004473	005373	7100	00	010	3637	TRA	INABQ	ABORT INVALID SCT		
					3638	*				
004474	400000	2351	13	000	3639	LDA	0,3,P.USER	CHECK CHANNEL COMMAND		
004475	100006	7551	14	000	3640	STA	.WEICM,4,P.IOQ	SAVE IT		EL8.
004476	770000	3750	07	000	3641	ANA	.FCCMD,DL			
004477	200000	1150	07	000	3642	CMPA	=0200000,DL	IS PROCESS LOAD COMMAND		
004500	005372	6000	00	010	3643	TZE	INAK8	ABORT K8		
					3644	*				
004501	400002	2351	13	000	3645	LDA	2,3,P.USER	SECOND COMMAND		
004502	100011	7551	14	000	3646	STA	.WEFCM,4,P.IOQ	MAY NOT BE I/O COMMAND		
004503	100016	0545	14	000	3647	STD	P.USER, .WEDRI,4,P.IOQ	SET DATA REGION DESC.		
004504	100025	4431	14	000	3648	SXL3	.WEEND+1,4,P.IOQ	SAVE CALLING SEQUENCE ADDRESS		
004505	000001	6250	00	000	3649	EAX5	1	SET FLAG PHYSICAL COMMAND REQUEST		

REGISTERS AT CALL TO CHANNEL MODULE

X1 = SCT ADDRESS ODR7 = P.CR

X2 = LOGICAL PRIMARY CHANNEL INDEX

X3 = SELECT SEQUENCE ADDRESS (NOT USE) ODR4 = P.USER

X4 = I/O ENTRY ADDRESS ODR1 = P.IOQ

X5 = COMMAND FLAG

 POSITIVE - PHYSICAL

 NEGATIVE - LOGICALL

X6 = KPX

X7 = CPUNO

ODR2 = P.PAT

ODR3 = CMD.BLK

ODR5 = P.IOS

ODR6 = P.SSA

.WEEND BOUND/ PAT OFFSET

.WEEND+1 ADJUST IC/ CALLING ADDRESS

					3650	*				
					3651	*				
					3652	*				
					3653	*				
					3654	*				
					3655	*				
					3656	*				
					3657	*				
					3658	*				
					3659	*				
					3660	*				
					3661	*				
					3662	*				
					3663	*				
					3664	*				
					3665	*				
					3666	*				
					3667	*				
					3668	*				
					3669	*				
					3670	*				
					3671	EP2CAL	NULL			
004506	100024	7201	14	000	3672	LXLO	.WEEND,4,P.IOQ	GET PAT OFFSET		EL8.
004507	004515	6000	00	010	3673	TZE	NOBM	NO PAT		EL8.
004510	006204	4704	07	000	3674	LDP	PO,SD,PSH,DL			EL8.
004511	000002	6725	00	000	3675	LDD	P.PAT,PH,PAT,,PO			EL8.
004512	200000	2351	10	000	3676	LDA	0,0,P.PAT	GET PAT OFFSET		EL8.
004513	000001	3150	03	000	3677	CANA	.FPBFM,DU	IS BUFFER MANAGER IN CONTROL		EL8.
004514	004065	6010	00	010	3678	TNZ	FSBFM	YES, GO TO IT		EL8.
					3679	NOBM	NULL			EL8.
					3680	*				

***EP5 INOS (REQUEST FOR I/O VIA MME GEINOS)

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3681 * * * * * CHANNEL MODULE EP2 TRACE * * * * *
3682 INHIB ON
3683 .TROPN TCOFF,GREG TRACE OFF
004515 700044 7173 00 000
004516 000026 7102 04 4544
004517 700312 2203 17 000 3684 LDXO .CRTEP,7,P.CR
004520 006131 4756 07 000 3685 LDP P.IOS,SD,DDD,DL
004521 701403 2363 12 000 3686 LDQ .CRCT4,2,P.CR
004522 500000 2363 02 000 3687 LDQ 0,QU,P.ICS GET CALLEE MODULE #
004523 000017 7722 00 000 3688 QRL 15 AND SET IN ENTRY
004524 000046 2762 07 000 3689 ORQ .YEPO2,DL IOS02020
004525 700000 7563 10 000 3690 STQ 0,0,P.CR
004526 700000 7443 10 000 3691 STX4 0,0,P.CR
004527 700001 7423 10 000 3692 STX2 1,0,P.CR
004530 100006 2353 14 000 3693 LDA .WEICM,4,P.IOQ
004531 014051 1152 00 010 3694 CMPA =0340000000002 IS THIS A SEEK IOS06755
004532 000002 6012 04 000 3695 TNZ 2,IC NO IOS06760
004533 100011 2353 14 000 3696 LDA .WEFCM,4,P.IOQ YES, GET READ/WRITE IOS06765
004534 000000 6252 15 000 3697 EAX5 ,5 TEST COMMAND TYPE
004535 004537 6052 00 010 3698 TPL **2 PHYSICAL COMMAND
004536 300000 2353 00 000 3699 LDA .IWCMD,,P.IOCB LOGICAL, GET LOGICAL COMMAND
004537 700003 7553 10 000 3700 STA 3,0,P.CR
004540 600042 2353 00 000 3701 LDA .SECNT,,P.SSA
004541 700002 7553 10 000 3702 STA 2,0,P.CR
004542 000000 6202 00 000 3703 .TRPUT PNO
004543 700052 7173 00 000 EAXO 0
3704 XED .CRTRV+8,,P.CR
3705 INHIB OFF
3706 * * * * * T R A C E E N D
000005 3707 P.IOS SET 5 .MIOS SEGMENT DESCRIPTOR
000003 3708 P.IOCB SET 3 COMMAND BLOCK DESC. FOR CALLIO
004544 3709 TCOFF NULL
004544 701400 2341 12 000 3711 SZN .CRCT1,2,P.CR TEST MASS STORE CALL8580
004545 010732 6040 00 010 3712 TMI MSCIO YES, USE COMMON REQUEST LOGIC CALL8585
004546 006131 4704 07 000 3713 LDP PO,SD,DDD,DL
004547 701403 2351 12 000 3714 LDA .CRCT4,2,P.CR GET CHANNEL MODULE NUMBER
004550 000000 4705 01 000 3715 LDP PO,0,AU,PO GET FIRST ENTRY DATA
004551 000000 5074 00 000 3716 AWDX 0,,PO EL8.
004552 000002 6354 04 4554 3717 EPPR P.IOS,**2,$ RETURN IC P.IOS
3718
004553 000002 7101 00 000 3719 TRA 2,,PO GO, CHANNEL MODULE EP2
3720
004554 004565 7100 00 010 3721 TRA INRML EXIT 0= NORMAL 3-WORD SELECT SEQUENCE
004555 004762 7100 00 010 3722 TRA INDTR 1= DS/DR NON DATA TRANSFER
004556 005073 7100 00 010 3723 TRA IRESS 2= REQUEST OR RESET STATUS
004557 005134 7100 00 010 3724 TRA NODAT =3 SINGLE CHAR. / NO DCW
004560 005140 7100 00 010 3726 TRA ITYTW 4= TWO TYPEWRITER COMMAND

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I/O SUPERVISOR

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***EP5 INOS (REQUEST FOR I/O VIA MME GEINOS)

004561	010732	7100	00	010	3727
004562	005372	7100	00	010	3728
004563	005462	7100	00	010	3729
004564	005372	7100	00	010	3730

TRA	MSCIO
TRA	INAK8
TRA	PERMS
TRA	INAK8

5=	MASSTORE COMMON REQUEST
6=	ILLEGAL COMMAND
7=	PERMISSION NOT GRANTED
8=	ILLEGAL COMMAND

IOS03330

ITP.1760

EXIT-0 FROM EP#2 NORMAL 3-WORD SELECT SEQUENCE

3732 *
 3733 * REGISTERS
 3734 * X1 = SCT ADDRESS ODR7 - P.CR
 3735 * X2 = LCX
 3736 * X3 = SELECT SEQUENCE ADDRESS (GEINOS) ODR4 - P.USER
 3737 * X4 = I/O ENTRY ADDRESS ODR1 - P.IOQ
 3738 * X6 = KPX
 3739 * X7 = CPUNO
 3740 * Q = COMMAND
 1, READ COMMAND
 2, WRITE COMMAND
 0, ELSE
 3741 * ODR2 = P.PAT
 3742 * ODR3 = CCMMAND BLOCK
 3743 * ODR5 = P.IOS
 3744 * ODR6 = P.SSA
 3745 *
 3746 * .WEEND BOUND/PAT OFFSET
 3747 * .WEEND+1 ADJUST IC/CALLING ADDRESS
 3748 *
 3749 *
 3750 *
 3751 *

					004565	3753	INRML	NULL			
						3754					
004565	002000	2350	07	000		3755	LDA	.FFDD1,DL	FIRST DATA REGION PRESENT		
004566	100001	2551	14	000		3756	ORSA	.WEPRV,4,P.IOQ	SET FLAG IN ENTRY		
						3757	*				
004567	000000	1160	07	000		3758	CMPQ	0,DL	CHECK COMMAND TYPE		
004570	005271	6000	00	010		3759	TZE	NSECU	NOT, READ/WRITE		
004571	000000	6350	02	000		3760	EAA	,QU	SET COMMAND TYPE		
004572	000022	7710	00	000		3761	ARL	18			
004573	100005	2551	14	000		3762	ORSA	.WEPEP,4,P.IOQ	FOR CACHE CLEAR CONTROL		
004574	000003	6350	00	000		3763	EAA	CHN3	SET CHANNEL PROGRAM #		
004575	100003	2551	14	000		3764	ORSA	.WEPID,4,P.IOQ			
004576	100016	7201	14	000		3765	LXLO	.WEDRI,4,P.IOQ	IS PRESENT DESCRIPTOR		
004577	005414	6000	00	010		3766	TZE	NDATS	NO DESCRIPTOR, ABORT		
004600	000004	7720	00	000		3767	QRL	4	READ OR WRITE		
004601	100016	3761	14	000		3768	ANQ	.WEDRI,4,P.IOQ	CHECK DESCRIPTOR'S PERMISSION		
004602	005271	6000	00	010		3769	TZE	NSECU	INVALID		
004603	100025	7231	14	000		3770	LXL3	.WEEND+1,4,P.IOQ	RESTORE XR3		
004604	100001	7201	14	000		3771	LXLO	.WEPRV,4,P.IOQ	TEST CALLER		
004605	400000	3000	03	000		3772	CANX0	.FFIOR,DU			
004606	004614	6000	00	010		3773	TZE	SRPCK	CALLIO		
						3774			NO, CHECK AND SET ANY DATA		
004607	001774	4704	07	000		3775	LDP	PO,DR4,DL	COPY DATA SEGMENT DESC. TO PO		
004610	400001	7211	13	000		3776	LXL1	1,3,P.USER	GET DCW POINTER		
						3777					
004611	013155	7020	00	010		3778	TSX2	DCWCK	VALIDATE DCW POINTER		
						3779			X1 DCW POINTER		
						3780			A DCW		
004612	100007	7411	14	000		3781	STX1	.WEOFF,4,P.IOQ	SET DCW POINTER		

RDSP2380
 IOS06610

EXIT-0 FROM EP#2 NORMAL 3-WORD SELECT SEQUENCE

004613	100012	7551	14	000	3782	STA	.WEFDC,4,P.IOQ	SET DCW	
					3783				
					004614	3784	SRPCK	NULL	
004614	100006	2351	14	000	3785	LDA	.WEICM,4,P.IOQ	SET COMMAND	
004615	014046	3750	00	010	3786	ANA	=0770C00770077		
004616	100006	7551	14	000	3787	STA	.WEICM,4,P.IOQ	TO FIRST COMMAND	
004617	100011	7551	14	000	3788	STA	.WEFCM,4,P.IOQ	TO SECOND COMMAND	
004620	100001	7201	14	000	3789	LXLO	.WEPRV,4,P.IOQ	IS CALLER CALLIO	
004621	400000	3000	03	000	3790	CANXO	.FFIOR,DU		
004622	004667	6000	00	010	3791	TZE	CLINK	YES, LINK	
004623	000003	6210	00	000	3792	EAX1	3		IOS04185
004624	100025	7411	14	000	3793	STX1	.WEEND+1,4,P.IOQ	3-WORD CALL SEQUENCE	IOS04190
					3794				
					3795				
					004625	3796	SRPC2	NULL	
004625	400002	2211	13	000	3797	LDX1	2,3,P.USER	GET STATUS RETURN POINTER	
004626	004653	6000	00	010	3798	TZE	CCACK	NO STATUS RETURN	
004627	100014	0545	14	000	3799	STD	P.USER,.WEICB,4,P.IOQ	SET STATUS RETURN DESC.	
004630	777774	6350	11	000	3800	EAA	-.IWST1,1	BUILD COMMAND BLOCK DESC. SAME AS	
004631	000020	7710	00	000	3801	ARL	16	CALLIO, BASE ADDRESS RE-ADDRESSING	
004632	100015	0351	14	000	3802	ADLA	.WEICB+1,4,P.IOQ	ADJUST BASE	IOS02035
004633	100015	7551	14	000	3803	STA	.WEICB+1,4,P.IOQ	& PUT IT AWAY	IOS02040
004634	004200	6340	07	000	3804	LDI	=0420C,DL	MASK OVERFLOW	IOS02045
004635	400001	2361	11	000	3805	LDQ	1,1,P.USER	VALIDATE SRP	IOS02050
004636	400000	3351	11	000	3806	K2A	LCA	0,1,P.USER	GET STATUS WORD
004637	004653	6044	00	010	3807	TMOZ	CCACK	NO OVERRIDE	IOS04AAM
004640	777777	3150	03	000	3808	CANA	-1,DU	TEST GEPR OVERRIDE	IOS02060
004641	004653	6010	00	010	3809	TNZ	CCACK	NO OVERRIDE	IOS02070
004642	000007	1150	07	000	3810	CMPA	7,DL	YES, IS IT TABULAR	IOS02075
004643	000002	6020	04	000	3811	TNC	2,IC	YES, USE TABLE	IOS02080
004644	000007	2350	07	000	3812	LDA	7,DL	NO, FORCE SPECIAL CODE	IOS02085
004645	004752	2360	05	010	3813	LDQ	GPOPT,AL	GET OVERRIDE BITS	IOS02090
004646	077777	3760	07	000	3814	ANQ	=077777,DL	SET GEPR OPTION FLAG	
004647	100005	2561	14	000	3815	ORSQ	.WEPEP,4,P.IOQ		
004650	004752	2350	05	010	3816	LDA	GPOPT,AL		IOS02105
004651	000022	7710	00	000	3817	ARL	18	POSITION GEPR OVERRIDE IF ANY	
					004652	3818	GPRO1	NULL	
004652	100004	2551	14	000	3819	ORSA	.WESCT,4,P.IOQ	SET GEPR OPTION FLAG	
					3820				
					3821	*			
					004653	3822	CCACK	NULL	
004653	400002	7211	13	000	3823	LXL1	2,3,P.USER	CCA OFFSET	
004654	004662	6000	00	010	3824	TZE	IONTR	NO COURTESY CALL ADDRESS	
004655	400000	2361	11	000	3825	K5A	LDQ	0,1,P.USER	VALIDATE CC ADDRESS
004656	004742	7050	00	010	3826	TSX5	CKCCM	CHECK CC ENTRY	IOS04AAM
004657	000000	6360	11	000	3827	EAQ	0,1		IOS04AAM
004660	400013	2760	07	000	3828	ORQ	=0400C13,DL		
					3829	*			
					004661	3830	BCC	NULL	
004661	013307	7050	00	010	3831	TSX5	BLDCC	BUILD CC ENTRY DESCRIPTOR	

EXIT-0 FROM EP#2 NORMAL 3-WORD SELECT SEQUENCE

					3832 *						
					3833	INHIB	ON				IOS06804
		004662			3834	IONTR	NULL				IOS01060
		004662			3835	NLINK	NULL				
004662	100025	2213	14	000	3836	LDX1	.WEEND+1,4,P.IOQ	GEINOS , ALWAYS .LINK			
004663	100001	7253	14	000	3837	LXL5	.WEPRV,4,P.IOQ	GET ADJUST IC			
004664	004701	6362	00	010	3838	EAQ	IRETN	RETRIVE CONTROL BITS			IOS04200
004665	004024	7102	00	010	3839	TRA	LINK				IOS04205
					3840 *						IOS04210
004666	100001	7203	14	000	3841	SLINK	LXLO .WEPRV,4,P.IOQ	RETRIEVE CONTROL BITS			IOS04215
		004667			3842	CLINK	NULL	FROM CALLIO			
004667	200000	3002	03	000	3843	CANXO	.FFMOD,DU	IS MASTER			
004670	004662	6012	00	010	3844	TNZ	NLINK	NO, SLAVE CALL			
004671	300001	2353	00	000	3845	LDA	.IWCBT,,P.IOCB	LINK OPTION REQUESTED			
004672	140000	3152	07	000	3846	CANA	.IFLKF+.IFLKS,DL				
004673	004662	6002	00	010	3847	TZE	NLINK	NO, REQUEST TO .LINK			
004674	000000	6252	10	000	3848	EAX5	0,0	SAVE CONTROL BITS			IOS04230
004675	004701	6362	00	010	3849	EAQ	IRETN	SET RETURN			IOS04235
004676	100000	3152	07	000	3850	CANA	.IFLKF,DL	IS LINKF			
004677	004020	6002	00	010	3851	TZE	LINKS	NO			IOS04245
004700	004022	7102	00	010	3852	TRA	LINKF	LINK FIRST			IOS04250

COMMON EXIT FROM REQUEST HANDLER

Request ID	Requester	Request Type	Request Status	Request Priority	Request Action	Request Description	Request Comment	Request Exit
					3854			
					3855 *			
	004701				3856 IRETN	NULL	RETURN FROM REQUEST HANDLER	
					3857	INHIB	ON	
004701	006133	4756	07	000	3858	LDP	P.SSL,SD,KL,DL	
004702	500052	6757	00	000	3859	LDD	P.SSL,KLSLV,P.SSL	RESTORE P.SSL FOR SLAVE
004703	400000	3052	03	000	3860	CANX5	.FFIOR,DU	VIA CALLIO,
004704	004721	6002	00	010	3861	TZE	ICALL	YES, VIA PMME CALLIO
					3862 *			NO, VIA GEINCS MUST BE ADJUST IC
004705	001764	4706	07	000	3863	LDP	PO,SSR,DL	GET SAFE STORE DESC.
004706	001761	4706	07	000	3864	LDP	PO,CTYP,DL	CHANGE TYPE TO 03
004707	000004	0213	00	000	3865	ADLX1	.WICI,PC	ADJUST RETURN IC
004710	000004	7413	00	000	3866	STX1	.WICI,PC	
004711	030000	3052	03	000	3867	CANX5	.FFROD+.FFRLC,DU	YES, IS RELC/ROAD SET
004712	004733	6012	00	010	3868	RETP2	TNZ	CROD
004713	000004	7203	00	000	3869	LXLO	.WICI,PC	
004714	000200	3002	03	000	3870	CANX0	.FBT28,DU	WAS MME IN SLAVE
004715	000002	6002	04	000	3871	TZE	2,IC	YES
004716	000053	4473	00	000	3872	SXL7	.WREGS+3,PO	NO, UPDATE XR7
	004717				3873	OCLIMB		NO, RETURN
004717	000000713400			000		VFD	18/C,C9/713,1/1,1/C,1/0,6/0	
004720	000000010000			000		VFD	1/0,9/0,8/0,1/N,1/C,2/0,2/1,12/0	
					3874 *			
004721	030000	3052	03	000	3875	ICALL	CANX5 .FFROD+.FFRLC,DU	IS RELC/ROAD SET
004722	004015	6002	00	010	3876	TZE	LNKRET	NO, EXIT
					3877 *			
004723	010000	3052	03	000	3878	CRODX	CANX5 .FFROD,DU	IS IT ROADBLOCK
004724	004730	6012	00	010	3879	TNZ	CRODY	YES
	004725				3880	.ARELC		NO, RELINQUISH
	004725					.CALLX	.MDISP,4,N	
						INHIB	SAVE,ON	
	004725					ICLIMB	SD.SVX,MDISP*64+4,EAXO	
004725	005704713400			000		VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.	
004726	000000606122			000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX	
						INHIB	RESTORE	
004727	004015	7102	00	010	3881	TRA	LNKRET	EXIT
					3882 *			
	004730				3883	CRODY	.AROAD	ROADBLOCK
	004730					.CALLX	.MDISP,2,N	
						INHIB	SAVE,ON	
	004730					ICLIMB	SD.SVX,MDISP*64+2,EAXO	
004730	005702713400			000		VFD	18/.MDISP*64+2,09/713,1/1,1/0,1/0,6/M.	
004731	000000606122			000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/C,2/0,12/SD.SVX	
						INHIB	RESTORE	
004732	004015	7102	00	010	3884	TRA	LNKRET	EXIT
					3885 *			
004733	000000	4706	07	000	3886	CROD	LDP	PO,*,DL
004734	600043	2353	00	000	3887	LDA	.SELVL,P.SSA	GET .MDISP SEGMENT
004735	010000	2752	07	000	3888	ORA	.FBT23,DL	ESTABLISH DDS
004736	600012	7553	56	000	3889	STA	.SSA,ID,P.SSA	MAKE STACK ENTRY

COMMON EXIT FROM REQUEST HANDLER

004737	010000	3052	03	000	3890	CANX5	.FFROD,DU	IS IT GEROAD	I0S04150
004740	000002	6013	00	000	3891	TNZ	2,,PO	YES, GOTO .MDISP,2	I0S04155
004741	000004	7103	00	000	3892	TRA	4,,PO	NO, GOTO .MDISP,4	I0S04160
					3893	*			
					3894	*	SUBROUTINE	IF PROCESS IS POPM, CC PAY IN MASTER	
					3895	*			
	004742				3896	CKCCM	NULL		
004742	000001	1062	03	000	3897	CMPX6	.PNPOP,DU	IS POPM	
004743	000000	6012	15	000	3898	TNZ	0,5	NO, NORMAL	
004744	100001	7203	14	000	3899	LXLO	.WEPRV,4,P.I0Q		
004745	200000	3002	03	000	3900	CANX0	.FFMOD,DU	IS MASTER REQUEST	
004746	000000	6012	15	000	3901	TNZ	0,5	NO SLAVE, NORMAL	
004747	000004	2352	07	000	3902	LDA	.FCCMM,DL		
004750	100004	2553	14	000	3903	ORSA	.WESCT,4,P.I0Q	SET CC FLAG, CC PAY IN MASTER	
004751	000000	7102	15	000	3904	TRA	0,5	RETURN	
					3905	*			
					3906	*			
					3907	*	DATA AREA		
					3908	*			
004752	000000	000000		000	3909	GPOPT	ZERO	NO OVERRIDE	I0S02125
004753	002000000000			000	3910	VFD	9/2,027/000	-1 ALL	I0S02130
004754	000000000C100			000	3911	VFD	9/0,027/100	-2 ALERT	I0S02135
004755	000000000200			000	3912	VFD	9/0,027/200	-3 USE OPTION	I0S02140
004756	000000000300			000	3913	VFD	9/0,027/300	-4 MT NOISE	I0S02145
004757	002000000400			000	3914	VFD	9/2,027/400	-5 ALL	I0S02150
004760	000000000500			000	3915	VFD	9/0,027/500	-6 CODE ALERT	I0S02155
004761	000000001700			000	3916	VFD	9/0,027/1700	-16 GEOT SPECIAL	I0S02160
					3917	*			I0S02165

EXIT-1 FROM EP#2 DS/DR NON DATA TRANSFER

3919 *
3920 *
3921 *
3922 *
3923 *
3924 *
3925 *
3926 *
3927 *
3928 *
3929 *
3930 *
3931 *
3932 *
3933 *
3934 *
3935 *
3936 *
3937 *
3938 *

REGISTERS

X3 = SELECT SEQUENCE ADDRESS (GEINOS) ODR4 - P.USER
X4 = I/O ENTRY ADDRESS ODR1 - P.IOQ
X6 = KPX
X7 = CPUNO
ODR2 = P.PAT
ODR3 = CMMAND BLOCK P.IOCB
ODR5 = P.IOS
ODR6 = P.SSA
ODR7 = P.CR

.WEEND BOUND/PAT OFFSET
.WEEND+1 ADJUST IC/CALLING ADDRESS

Q RELATIVE FLAG
= 0, REW
=+N, FSR
=-N, BSR

Address	Offset	Length	Mode	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Description	Notes
004762	100024	7233	14	000								3940 LXL3	.WEEND,4,P.IOQ PAT OFFSET
004763	100005	2213	14	000								3941 LDX1	.WEPEP,4,P.IOQ PAT POINTER OFFSET
004764	740000	2202	03	000								3942 LDX0	=0740000,DU
004765	200000	3003	11	000								3943 CANX0	0,1,P.PAT IS NULL FILE
004766	005004	6002	00	010								3944 TZE	NULLS YES, NULL
004767	100004	2213	14	000								3945 LDX1	.WESCT,4,P.IOQ
004770	017774	3612	03	000								3946 ANX1	.FSCT1,DU SCT ADDRESS
004771	013354	7002	00	010								3947 TSX0	ILPCX CALCULATE LOGICAL CHANNEL INDEX
004772	005373	7102	00	010								3948	IN X2
004773	001000	2352	03	000								3949 TRA	INABQ INVALID SCT, ABORT
004774	200002	3153	13	000								3950 LDA	.FMRND,DU
004775	005013	6002	00	010								3951 CANA	2,3,P.PAT IS RANDOM FILE
004776	000000	1162	03	000								3952 TZE	INDOK NO, LINKED FILE
004777	005002	6012	00	010								3953 CMPQ	0,DU FSR/BSR REQUEST
005000	400000	2352	03	000								3954 TNZ	*+3 YES, INVALID
005001	005023	7102	00	010								3955 LDA	=0400000,DU RANDOM FILE REWIND IS NO-OPERATION
005002	000045	2362	07	000								3956 TRA	ISTAT ALWAYS READY STATUS RETURN
005003	005373	7102	00	010								3957 *	
												3958 LDQ	.AC045,DL K6 - INVALID COMMAND FOR FILE EL8.
												3959 TRA	INABQ ABORT K6
												3960 *	
005004	000100	2352	07	000								3961 NULLS	NULL NULL FILE SPACING OR STATUS REQS.
005005	200001	0553	13	000								3962 LDA	64,DL 1 MILLI SEC CONNECT CONSTANT
												3963 ASA	1,3,P.PAT ADD TO I/O TIME
005006	400000	2352	03	000								3964 NULS1	NULL
005007	000001	1162	07	000								3965 LDA	=0400000,DU SET CHANNEL READY STATUS
005010	005023	6022	00	010								3966 CMPQ	1,DL TEST DIRECTION
005011	170000	2752	03	000								3967 TNC	ISTAT BACK OR STATUS REQUEST READY
												3968 ORA	=0170000,DU FORWARD INSERT LOGICAL EOF

EXIT-1 FROM EP#2 DS/DR NON DATA TRANSFER

Address	OpCode	OpType	OpSize	OpDir	OpVal	OpName	OpDesc	OpStatus	OpComments
005012	005023	7102	00	010	3969	TRA	ISTAT		RETURN STATUS
					3970	INDOK	NULL		
					3971	CMPQ	0,DU		
005013	000000	1162	03	000	3972	TNZ	IBSFS		
005014	005060	6012	00	010	3973	LDQ	=0777000,DU		BACKSPACE IMPOSSIBLE
005015	777000	2362	03	000	3974	LDE	-1,DU		SKWPT FLAG
005016	777777	4112	03	000	3975	TSX5	MSCSK		CALC SEEK ADDR
005017	011206	7052	00	010	3976	TRA	2,IC		ERROR RETURN, DONE
005020	000002	7102	04	000	3977	TRA	-4,IC		MORE YET
005021	777774	7102	04	000	3978	LDA	=0400200,DU		COMPLETE, STATUS BEGINNING
005022	400200	2352	03	000	3979	*			
					3980	ISTAT	NULL		
					3981	STA	.WEIOS,4,P.IOQ		SAVE STATUS
005023	100013	7553	14	000	3982	LDX3	0,DU		
005024	000000	2232	03	000	3983	STX3	.WEEND+1,4,P.IOQ		ZERO IC&I ADJUSTMENT IN UPPER
005025	100025	7433	14	000	3984	LXL3	.WEEND+1,4,P.IOQ		SELECT SEQUENCE ADDRESS
005026	100025	7233	14	000	3985	*			
					3986	*			
					3987	IST1	NULL		
					3988	LXL0	.WEPRV,4,P.IOQ		IS CALL FROM CALLIO
005027	100001	7203	14	000	3989	CANX0	.FFIOR,DU		
005030	400000	3002	03	000	3990	TZE	IST11		YES, STATUS RETURN
005031	005051	6002	00	010	3991	LDX1	2,3,P.USER		
005032	400002	2213	13	000	3992	TZE	IST12		NO STATUS RETURN
005033	005042	6002	00	010	3993	LDA	0,1,P.USER		VALIDATE SRP
005034	400000	2353	11	000	3994	K2B	LDQ	1,1,P.USER	
005035	400001	2363	11	000	3995	EAA	-.IWST1,1		BUILD COMMAND BLOCK DESCRIPTOR
005036	777774	6352	11	000	3996	ARL	16		
005037	000020	7712	00	000	3997	STD	P.USER,.WEICB,4,P.IOQ		
005040	100014	0547	14	000	3998	ASA	.WEICE+1,4,P.IOQ		SET STATUS RETURN POINTER
005041	100015	0553	14	000	3999	*			
					4000	IST12	NULL		
					4001	LXL1	2,3,P.USER		
005042	400002	7213	13	000	4002	TZE	IST11		NO COURTESY CALL
005043	005051	6002	00	010	4003	K5B	LDX0	0,1,P.USER	
005044	400000	2203	11	000	4004	TSX5	CKCCM		CHECK, CC MODE
005045	004742	7052	00	010	4005	EAQ	,1		VALID CCA, BUILD ENTRY DESC. FOR CC
005046	000000	6362	11	000	4006	ORQ	=0400013,DL		
005047	400013	2762	07	000	4007				
005050	013307	7052	00	010	4008	TSX5	BLDCC		BUILD CC ENTRY DESCRIPTOR
					4009	*			
					4010	IST11	NULL		
					4011	LDA	.WEIOS,4,P.IOQ		STATUS RETURN WORD 1
005051	100013	2353	14	000	4012	LDQ	0,DU		WORD 2
005052	000000	2362	03	000	4013	LXLS	.WEPRV,4,P.IOQ		RETRIVE CONTROL BITS
005053	100001	7253	14	000	4014	*			
					4015	*			
					4016	LDX1	3,DU		
005054	000003	2212	03	000	4017	ADLX1	.WEEND+1,4,P.IOQ		ADD 3 TO ICI
005055	100025	0213	14	000	4018	EAX0	IRETN		SET STRET EXIT
005056	004701	6202	00	010					XXXX3160

EXIT-1 FROM EP#2 DS/DR NON DATA TRANSFER

Job ID	Device	Unit	Track	Head	Block	Operation	Code	Reason	Status	Message
005057	003036	7102	00	010	4019	TRA	STRET		RETURN STATUS	XXXX3170
					4020	INHIB	OFF			XXXX3180
					4021	*				
					4022	*				
					4023	IBSFS	NULL		BSR/FSR, Q REG. CONTAINS COUNT	
005060	777777	4110	03	000	4024	LDE	-1,DU		SKWPT FLAG	EL8.
005061	011206	7050	00	010	4025	TSX5	MSCSK		SEEK ADDRESS CALC	EL8.
005062	005065	7100	00	010	4026	TRA	IRCNT		SPACE NOT COMPLETE	
005063	400000	2350	03	000	4027	LDA	=0400000,DU			
005064	005023	7100	00	010	4028	TRA	ISTAT		CHANNEL READY	
					4029	*				
					4030	IRCNT	NULL			
005065	200000	3160	03	000	4031	CANQ	=0200000,DU			
005066	005022	6010	00	010	4032	TNZ	ISTAT-1		BACK TOO FAR	EL8.
005067	100000	3160	03	000	4033	CANQ	=0100000,DU			
005070	005341	6000	00	010	4034	TZE	DSDRE			EL8.
005071	570000	2350	03	000	4035	LDA	=0570000,DU		END OF FILE, LOGICAL EOF	
005072	005023	7100	00	010	4036	TRA	ISTAT			

EXIT-2 FROM EP#2 REQUEST/RESET STATUS

4038 *
 4039 * REGISTERS
 4040 * X3 = SELECT SEQUENCE ADDRESS (GEINOS) ODR4 - P.USER
 4041 * X4 = I/O ENTRY ADDRESS ODR1 - P.IOQ
 4042 * X6 = KPX
 4043 * X7 = CPUNO
 4044 * ODR2 = P.PAT
 4045 * ODR3 = P.IOCB COMMAND BLOCK
 4046 * ODR6 = P.SSA
 4047 * ODR7 = P.CR
 4048 *
 4049 * .WEEND BOUND/PAT OFFSET
 4050 * .WEEND+1 ADJUST IC/CALLING ADDRESS
 4051 *
 4052 *

005073

005073	100006	2351	14	000	4053	IRESS	NULL		
005074	014046	3750	00	010	4054 *				
005075	100006	7551	14	000	4055	LDA	.WEICM,4,P.IOQ	I/O COMMAND	
005076	100011	7551	14	000	4056	ANA	=0770000770077		
					4057	STA	.WEICM,4,P.IOQ	PMX	
					4058	STA	.WEFCM,4,P.IOQ	SMX	
					4059 *				
005077	000002	6350	00	000	4060	EAA	CHN2	SET CHANNEL PROGRAM #	
005100	100003	2551	14	000	4061	ORSA	.WEPID,4,P.IOQ		
005101	100001	7201	14	000	4062	LXLO	.WEPRV,4,P.IOQ	IS CALLIO,	
005102	400000	3000	03	000	4063	CANXO	.FFIOR,DU		
005103	005114	6000	00	010	4064	TZE	IRES2	YES	
005104	400002	2211	13	000	4065	LDX1	2,3,P.USER	NO, SRP	
005105	005114	6000	00	010	4066	TZE	IRES2	NULL	
005106	400000	2351	11	000	4067	LDA	0,1,P.USER VALIDATE SRP		
005107	400001	2361	11	000	4068	K2C	LDQ	1,1,P.USER	
005110	100014	0545	14	000	4069	STD	P.USER, .WEICB,4,P.IOQ		
005111	777774	6350	11	000	4070	EAA	-.IWST1,1	SET STATUS RETURN POINTER	
005112	000020	7710	00	000	4071	ARL	16	CHANGE BASE	
005113	100015	0551	14	000	4072	ASA	.WEICB+1,4,P.IOQ	SET NEW DESC. IMAGE	
					4073 *				
					005114	4074	IRES2	NULL	
005114	000003	2210	03	000	4075	LDX1	3,DU		
005115	100025	7411	14	000	4076	STX1	.WEEND+1,4,P.IOQ	3 WORD SELECT SEQUENCE	
					4077 *				
005116	100012	4501	14	000	4078	STZ	.WEFDC,4,P.IOQ	INSURE NO DCW FOR NEXT COMMAND	
005117	100005	2211	14	000	4079	LDX1	.WEPEP,4,P.IOQ	GET PAT POINTER OFFSET	
005120	005126	6000	00	010	4080	TZE	IRES3	NO PAT REQUEST	
005121	740000	2200	03	000	4081	LDXO	=0740000,DU	TEST FOR NULL FILE	
005122	200000	3001	11	000	4082	CANXO	0,1,P.PAT	IS IT	
005123	005126	6010	00	010	4083	TNZ	IRES3	NOT NULL CONTINUE	
005124	000000	6360	00	000	4084	EAQ	0	SET FOR READY STATUS	
005125	005006	7100	00	010	4085	TRA	NULS1	RETURN STATUS	
					4086 *				
					005126	4087	IRES3	NULL	

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 IOS07150
 IOS04AAM

EXIT-2 FROM EP#2 REQUEST/RESET STATUS

005126	002000	2350	07	000	4088	LDA	.FGPOV,DL	GEPR OVERRIDE OPTION
005127	100004	2551	14	000	4089	ORSA	.WESCT,4,P.I0Q	
005130	100001	7201	14	000	4090	LXLO	.WEPRV,4,P.I0Q	CALL FROM CALLIO
005131	400000	3000	03	000	4091	CANX0	.FFIOR,DU	
005132	004667	6000	00	010	4092	TZE	CLINK	YES, LINK
005133	004653	7100	00	010	4093	TRA	CCACK	NO, TEST COURTESY CALL

EXIT-3 FROM EP2 NIN DATA TRANSFER OR SINGLE CHARACTER

4095 *
4096 *
4097 *
4098 *
4099 *
4100

					4101	NODAT	NULL				
005134	100025	7231	14	000	4102		LXL3	.WEEND+1,4,P.I0Q	RESTORE CALL SEQ ADDRESS		I0S06620
					4103						
005135	000004	6350	00	000	4104		EAA	CHN4	SET CHANNEL PROGRAM #		
005136	100003	2551	14	000	4105		ORSA	.WEPID,4,P.I0Q			
005137	004614	7100	00	010	4106		TRA	SRPCK	GO TO NORMAL PROCESS		

EXIT-4 FROM EP#2 TWO TYPEWRITER COMMANDS

4108 *
 4109 * REGISTERS
 4110 * X3 = SELECT SEQUENCE ADDRESS (GEINOS) ODR4 - P.USER
 4111 * X4 = I/O ENTRY ADDRESS ODR1 - P.IOQ
 4112 * X6 = KPX
 4113 * X7 = CPUNO
 4114 * ODR2 = P.PAT
 4115 * ODR3 = P.IOCB COMMAND BLOCK
 4116 * ODR5 = P.IOS
 4117 * ODR6 = P.SSA
 4118 * ODR7 = P.CR

4119 *
 4120 * .WEEND BOUND/PAT OFFSET
 4121 * .WEEND+1 ADJUST IC/CALLING ADDRESS

4122 *
 4123 * IF FROM CALLIO, QU/QL = 1ST CMD FLAG/2ND CMD FLAG
 4124 * 1, READ COMMAND
 4125 * 2, WRITE COMMAND
 4126 * 0, ELSE
 4127 *
 4128 *

					005140	4129	ITYTW	NULL		
005140	002000	2350	07	000		4130	LDA	.FFDD1,DL		
005141	100001	2551	14	000		4131	ORSA	.WEPRV,4,P.IOQ	TWO DATA REGION PRESENT	
005142	100001	7201	14	000		4132	LXLO	.WEPRV,4,P.IOQ	IS CALLIO'S	
005143	400000	3000	03	000		4133	CANXO	.FFIOR,DU		
005144	005146	6000	00	010		4134	TZE	*+2	YES	
005145	100020	0545	14	000		4135	STD	P.USER,.WEDRF,4,P.IOQ	NO, SET DATA REGION DESCRIPTOR	
						4136 *				
005146	000000	6350	06	000		4137	EAA	.QL	CHECK DESCRIPTOR'S PERMISSION	
005147	000000	6360	02	000		4138	EAQ	.QU	CLEAR SECOND COMMAND FLAG	
005150	100016	7201	14	000		4139	LXLO	.WEDRI,4,P.IOQ	TEST DESCRIPTOR	
005151	005414	6000	00	010		4140	TZE	NDATS	NOT PRESENT, ABORT	
005152	000004	7720	00	000		4141	QRL	4		
005153	100016	3761	14	000		4142	ANQ	.WEDRI,4,P.IOQ	FIRST DATA REGION	
005154	005271	6000	00	010		4143	TZE	NSECU	NO DATA REGION 1	EL8.
005155	100020	7201	14	000		4144	LXLO	.WEDRF,4,P.IOQ	TEST DESCRIPTOR	
005156	005414	6000	00	010		4145	TZE	NDATS	NOT PRESENT, ABORT	
005157	000004	7710	00	000		4146	ARL	4		
005160	100020	3751	14	000		4147	ANA	.WEDRF,4,P.IOQ	SECOND DATA REGION	
005161	005271	6000	00	010		4148	TZE	NSECU	NO DATA REGION 2	EL8.
005162	100001	7201	14	000		4149	LXLO	.WEPRV,4,P.IOQ	TEST CALLER, IS CALLIO	
005163	400000	3000	03	000		4150	CANXO	.FFIOR,DU		
005164	004667	6000	00	010		4151	TZE	CLINK	YES,	
005165	400001	7211	13	000		4152	LXL1	1,3,P.USER	NO GEINOS	
005166	001774	4704	07	000		4153	LDP	PO,.DR4,DL	GET DCW FOR 1ST COMMAND	
						4154				
005167	013155	7020	00	010		4155	TSX2	DCWCK	VALIDATE DCW POINTER	
005170	100007	7411	14	000		4156	STX1	.WEOFF,4,P.IOQ	SET DCW ADDRESS TO .FFOFF	
005171	100012	7551	14	000		4157	STA	.WEDFC,4,P.IOQ	SET DCW	

EXIT-4 FROM EP#2 TWO TYPEWRITER COMMANDS

					4158 *				
		005172			4159 FIVEW	NULL		ALL FIVE WORDS SS	
005172	000002	0230	03	000	4160	ADLX3	2,DU	NEXT COMMAND	
005173	400001	7211	13	000	4161	LXL1	1,3,P.USER	GET DCW FOR SECOND COMMAND	
005174	001774	4704	07	000	4162	LDP	PO,DR4,DL		
					4163				
005175	013155	7020	00	010	4164	TSX2	DCWCK	VALIDATE DCW POINTER	
005176	100007	4411	14	000	4165	SXL1	.WEOFF,4,P.IOQ	SET DCW ADDRESS TO .FIOFF	
005177	005336	7100	00	010	4166	TRA	FIVEW1		

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EXIT-5 FROM EP#2 TWO DS/DR DATA TRANSFER COMMANDS

4168 *
 4169 *
 4170 *
 4171 *
 4172 *
 4173 *
 4174 *
 4175 *
 4176 *
 4177 *
 4178 *
 4179 *
 4180 *
 4181 *
 4182 *
 4183 *
 4184 *
 4185 *
 4186 *
 4187 *
 4188 *
 4189 *

REGISTERS

X3 = SELECT SEQUENCE ADDRESS (GEINOS) ODR4 - P.USER
 X4 = I/O ENTRY ADDRESS ODR1 - P.IOQ
 X6 = KPX
 X7 = CPUNO
 QL = COMMAND FLAG
 1, READ COMMAND
 2, WRITE COMMAND
 C, ELSE
 ODR2 = P.PAT
 ODR3 = P.IOCB COMMAND BLOCK
 ODR5 = P.IOS
 ODR6 = P.SSA
 ODR7 = P.CR

					005200	4188	IDSDR	NULL				
						4189		INHIB	ON			IOS00130
005200	002000	2352	07	000		4190		LDA	.FFDD1,DL	FIRST DATA REGION PRESENT		
005201	100001	2553	14	000		4191		ORSA	.WEPRV,4,P.IOQ	SET IN ENTRY		
005202	100005	2563	14	000		4192		ORSQ	.WEPEP,4,P.IOQ	SET COMMAND TYPE FOR CACHE CONTROL		
005203	000001	2352	03	000		4193		LDA	CHN1,DU	SET CHANNEL PROGRAM # (DS NORMAL)		
005204	100003	2553	14	000		4194		ORSA	.WEPID,4,P.IOQ	IN ENTRY		
005205	100001	7203	14	000		4195		LXLO	.WEPRV,4,P.IOQ	IS CALLIO		
005206	400000	3002	03	000		4196		CANXD	.FFIOR,DU			
005207	005273	6012	00	010		4197		TNZ	DSDR5	NO, GEINOS		
						4198	*					
005210	000000	6232	06	000		4199		EAX3	.QL	CALLIO, SAVE COMMAND FLAG		
005211	300001	2353	00	000		4200		LDA	.IWCBT,,P.IOCB	TEST SEEK ADDRESS TYPE		
005212	002000	3152	07	000		4201		CANA	.IFABS,DL	IS ABSOLUTE		
005213	005222	6002	00	010		4202		TZE	DSDR2	NO,		
005214	100001	2363	14	000		4203		LDQ	.WEPRV,4,P.IOQ	YES, REQUEST FROM MASTER MODE		
005215	200000	3162	07	000		4204		CANQ	.FFMOD,DL			
005216	005222	6012	00	010		4205		TNZ	DSDR2	NO, IGNORE ABS OPTION		
005217	300004	2363	00	000		4206		LDQ	.IWST1,,P.IOCB	RELATIVE BLOCK ADDRESS FROM .IWST1		
005220	100013	7563	14	000		4207		STQ	.WEIOS,4,P.IOQ	SET IN ENTRY		
005221	005262	7102	00	010		4208		TRA	DSDR1C			
						4209						
						4210						
					005222	4211	DSDR2	NULL		NOT ABS, NOT MASTER REQUEST		
005222	200000	3152	03	000		4212		CANA	.IFCMD,DU	IS LOGICAL COMMAND REQUEST		
005223	000004	6012	04	000		4213		TNZ	4,IC	NO		IOS07310
005224	300006	2353	00	000		4214		LDA	.IWSEK,,P.IOCB	YES, GET SEEK DATA		IOS07315
005225	100013	7553	14	000		4215		STA	.WEIOS,4,P.IOQ	FROM COMMAND BLOCK		IOS07320
005226	005262	7102	00	010		4216		TRA	DSDR1C			IOS07325
005227	006013	4706	07	000		4217		LDP	PO,SD.IOG,DL	NO, SEEK DATA IS IN OTHER SEGMENT		

EXIT-5 FROM EP#2 TWO DS/DR DATA TRANSFER COMMANDS

005300	100013	7553	14	000	4268	STA	.WEIOS,4,P.IOQ	SAVE IN ENTRY	IOS07285
005301	400000	2353	11	000	4269	K4C LDA	0,1,P.USER		IOS04AAM
					4270	*			
					005302	4271	DSDR7 NULL		
005302	100024	7233	14	000	4272	LXL3	.WEEND,4,P.IOQ	GET PAT BODY OFFSET	
005303	100004	2213	14	000	4273	LDX1	.WESCT,4,P.IOQ	GET SCT	
005304	017774	3612	03	000	4274	ANX1	.FSCT1,DU		
005305	013354	7002	00	010	4275	TSX0	ILPCX	CALCULATE LOGICAL CHANNEL INDEX	
					4276			X2 WILL HAVE INDEX	
005306	005373	7102	00	010	4277	TRA	INABQ	INVALID SCT , ABORT	
005307	001000	2352	03	000	4278	LDA	.FMRND,DU		
005310	200002	3153	13	000	4279	CANA	2,3,P.PAT	IS FILE RANDOM	
005311	005315	6002	00	010	4280	TZE	LINKD	NO LINKED	
005312	100013	2363	14	000	4281	LDQ	.WEIOS,4,P.IOQ	RANDOM GET RELATIVE BLOCK ADDRESS	
005313	777777	4112	03	000	4282	LDE	-1,DU	SKWPT FLAG	EL8.
005314	005321	7102	00	010	4283	TRA	CALLB+1		EL8.
					4284				
					4285	*			
					005315	4286	LINKD NULL	LINKED FILE	
005315	100011	2363	14	000	4287	LDQ	.WEFCM,4,P.IOQ	GET RECORD COUNT	
005316	007700	3762	07	000	4288	ANQ	=07700,DL	QL= N-1 RECORDS	
005317	000006	7722	00	000	4289	QRL	6	ALL LINKED FILE R/W	
					4290	*			
					005320	4291	CALLB NULL		
005320	300000	4112	03	000	4292	LDE	=0300000,DU	MSKWPT FLAG	EL8.
005321	011206	7052	00	010	4293	TSX5	MSCSK	CALK SEEK ADDRESS	EL8.
005322	005341	7102	00	010	4294	TRA	DSDRE	ERROR RETURN	EL8.
					005323	4295	DSDRN NULL	NORMAL RETURN	EL8.
005323	000010	2352	07	000	4296	LDA	.FSEEK,DL	SET SEEK DATA FLAG	
005324	100004	2553	14	000	4297	ORSA	.WESCT,4,P.IOQ		
005325	100006	7563	14	000	4298	STQ	.WEICM,4,P.IOQ	KEEP SEEK DATA IN I/O ENTRY	
005326	760000	2212	03	000	4299	LDX1	=0760000,DU	GET OLD SCT OUT	
005327	100004	3413	14	000	4300	ANSX1	.WESCT,4,P.IOQ	SAVE ANY SPECIAL BITS	
005330	100004	2403	14	000	4301	ORSX0	.WESCT,4,P.IOQ	INSERT NEW SCT	
005331	100001	7203	14	000	4302	LXL0	.WEPRV,4,P.IOQ	TEST, IS VIA CALLIO	
005332	400000	3002	03	000	4303	CANX0	.FFIOR,DU		
005333	004667	6002	00	010	4304	TZE	CLINK	YES, GO TO LINK	
005334	100025	7233	14	000	4305	LXL3	.WEEND+1,4,P.IOQ	SELECT SEQUENCE ADDRESS FOR GEINOS	
005335	000002	0232	03	000	4306	ADLX3	2,DU	ADJUST RETURN ADDRESS	
005336	000005	6222	00	000	4307	FIVEW1 EAX2	5		IOS04275
005337	100025	7423	14	000	4308	STX2	.WEEND+1,4,P.IOQ	5-WORD CALL SEQUENCE	IOS04280
005340	004625	7102	00	010	4309	TRA	SRPC2		IOS04285
					4310				
					4311	*			
					005341	4312	DSDRE NULL	ERROR RETURN TEST STATUS	
005341	100000	3162	03	000	4313	CANQ	=0100000,DU		
005342	005424	6002	00	010	4314	TZE	ABPGM	FORWARD TOO FAR	EL8.
005343	001000	2362	03	000	4315	LDQ	.FMRND,DU	IS FILE RANDOM	
005344	200002	3163	13	000	4316	CANQ	2,3,P.PAT		
005345	005424	6012	00	010	4317	TNZ	ABPGM	YES, ABORT	

EXIT-5 FROM EP#2 TWO DS/DR DATA TRANSFER COMMANDS

		005346	4318	NULRD	NULL				
005346	570000	2752 03 000	4319		ORA	=0570000,DU	INSERT LOGICAL EOF		
		005347	4320	NULWT	NULL				
005347	100013	7553 14 000	4321		STA	.WEIOS,4,P.IOQ	KEEP STATUS		
005350	100025	7233 14 000	4322		LXL3	.WEEND+1,4,P.IOQ			
005351	000002	0232 03 000	4323		ADLX3	2,DU			
005352	000002	2212 03 000	4324		LDX1	2,DU			
005353	100025	7413 14 000	4325		STX1	.WEEND+1,4,P.IOQ	ADJUST IC FOR GEINOS EXIT		
005354	005027	7102 00 010	4326		TRA	IST1			
			4327						
			4328						
			4329						
			4330	*					
		005355	4331	DSDR6	NULL		REQUEST VIA CALLIO		
005355	100001	7213 14 000	4332		LXL1	.WEPRV,4,P.IOQ			
005356	200000	3012 03 000	4333		CANX1	.FFMOD,DU	IS MASTER MODE REQUEST		
005357	005302	6012 00 010	4334		TNZ	DSDR7	NO, SLAVE NORMAL REQUEST		
005360	300001	2353 00 000	4335		LDA	.IWCBT,,P.IOCB			
005361	002240	3152 07 000	4336		CANA	.IFSCCT+.IFDNM+.IFAES,DL	IS SPECIAL REQUEST NO PAT		
005362	005302	6002 00 010	4337		TZE	DSDR7	NORMAL REQUEST		IOS04AAM
005363	100001	7203 14 000	4338		LXLO	.WEPRV,4,P.IOQ	GET FLAGS		IOS04AAM
005364	000002	3002 03 000	4339		CANX0	.FJSTR,DU	IS THIS J* I/O		IOS04AAM
005365	005302	6012 00 010	4340		TNZ	DSDR7	YES, NORMAL S.A.		IOS04AAM
005366	300006	2363 00 000	4341		LDQ	.IWSEK,,P.IOCB	GET ABS SEEK ADDRESS		IOS04AAM
005367	100004	2203 14 000	4342		LDX0	.WESCT,4,P.IOQ			IOS04AAM
005370	017774	3602 03 000	4343		ANX0	.FSCT1,DU	GET SCT PTR		IOS04AAM
005371	005323	7102 00 010	4344		TRA	DSDRN	AND AWAY WE GO		IOS04AAM

EXIT-7 FROM EP#2 PERMISSION NOT GIVEN FOR PERM FILE

4432 *
4433 *
4434 *
4435 *
4436 *
4437 *
4438 *
4439 *
4440
4441 *

REGISTERS

X1 = PERMISSION FLAG
BIT 0=1 IF READ
BIT 1=1 IF WRITE
X2 = PAT BODY OFFSET
X4 = I/O ENTRY ADDRESS

ODR2 - P.PAT
ODR1 - P.IOQ

005462

005462	100005	2201	14	000	4442	PERMS	NULL			
005463	200000	2361	10	000	4443	LDXO	.WEPEP,4,P.IOQ	GET PAT POINTER OFFSET		
005464	740000	3160	03	000	4444	LDQ	0,0,P.PAT	GET PAT POINTER		
005465	005473	6000	00	010	4445	CANQ	=0740C00,DU	ANY PERMISSIONS		
005466	000115	2360	07	000	4446	TZE	NULLF	NO, THIS IS NULL FILE		
005467	400000	3010	03	000	4447	LDQ	.AC115,DL	PREPARE REASON CODE		EL8.
005470	005373	6000	00	010	4448	CANX1	.FBTO,DU	TEST READ FLAG		EL8.
005471	000116	2360	07	000	4449	TZE	INABQ	NO WRITE PERMISSION		EL8.
005472	005373	7100	00	010	4450	LDQ	.AC116,DL	WAS READ		EL8.
					4451	TRA	INABQ	NO READ PERMISSION		EL8.

4452 *
4453 *
4454 *

NULL FILE NO DATA TRANSFER

005473

005473	000100	2350	07	000	4455	NULLF	NULL			
005474	200001	0551	12	000	4456	LDA	64,DL	1 MILLI SEC PER CONNECT		
005475	000000	2350	03	000	4457	ASA	1,2,P.PAT	FOR EACH NULL ACCESS		
005476	200000	3010	03	000	4458	LDA	0,DU	ZERO STATUS WORD FOR RETUN		
005477	005346	6000	00	010	4459	CANX1	.FWPRM,DU	WAS WRITE REQUESTED		
005500	400000	2350	03	000	4460	TZE	NULRD	NO, THIS WAS READ, RETURN LOGICAL EOF		
005501	005347	7100	00	010	4461	LDA	=04C0C00,DU	THIS WAS WRITE, RETURN READY		
					4462	TRA	NULWT			

C A L L I / O P R O C E S S O R

4464 *
 4465 * EP35 CALLIO
 4466 * ENTERED VIA A PMME CALLIO.
 4467 *
 4468 * EP36 SCALIO
 4469 * ENTERED VIA A .NINOS.
 4470 *
 4471 * EP51 NWCAIO
 4472 * ENTERED VIA A .AINOS
 4473 * PAGE UN-WIRED CALLIO
 4474 *

DESCRIPTORS.

4475 *
 4476 * ODR1 = COMMAND BLOCK
 4477 * ODR2 = FIRST DATA REGION
 4478 * ODR3 = SECOND DATA REGION
 4479 * ODR4 = CCURTASY CALL ENTRY
 4480 *

WHEN VIA PMME, ALL DESCRIPTOR IS IN PARAMETER STACK

005502

4481 *
 4482 *
 4483 * COMMAND BLOCK FORM
 4484 * IOCB4 LIST

* * * * * C O M M A N D B L O C K I O C B 4 * * * * *

KEY PARAMATER/DESCRIPTION

NOTE/CODE(8)

FILE= INPUT/OUTPUT FILE DEFINITION
 (FC,XX)

(MSCODE,XX)	FILE CODE	
(DVNAME,XXX)	MESSAGE CODE	.IFCNS=1
PAT	DEVICE NAME	.IFDNM=1
SCT	PAT POINTER	.IFPAT=1
	SCT ADDRESS	.IFSCT=1

OP= INPUT/OUTPUT OPERATION

R	READ	1
W	WRITE	2
RQS	REQUEST STATUS	4
RSS	RESET STATUS	5
REW	REWIND	6
FSR	FORWARD SPACE RECORD	7
BSR	BACK SPACE RECORD	10

CALL I/O PROCESSOR

MODE= AUXILIARY I/O OPERATION FOR LOGICAL
 ED EDIT MODE .IWCMD
 BIT10=1
 B BINARY MODE 1
 D BCD MODE 2
 A ASCII MODE 3
 E EBCDIC MODE 4
 S2 S2000 TAPE 5
 9C 9 CHANNEL TAPE 6

CMD= INPUT/OUTPUT CODE SPECIFIED 12 OCTAL DIGITS
 .IFPCD=1

DCW= DATA CONTROL WORD
 FORM DCW=(%NODCW,ADDRESS1,ADDRESS2)
 %NDCW NO DCW SPECIFIED .IFDCW=1
 IF SPECIFIED, FOLLOWING ADDRESS
 SPECIFICATION INDICATED ADDRESS
 OFFSET OF DATA BUFFER.
 ADDRESS1 DCW ADDRESS FOR FIRST COMMAND .IFDD1=1
 ADDRESS2 DCW ADDRESS FOR SECOND COMMAND .IFDD2=1

GPR= GEPR OVERRIDE OPTION
 ALL OVERRIDE ALL ERROR CONDITION 1
 LRT DATA ALERT OVERRIDE 2
 U 3
 NOISE MT NOISE ERROR 4
 SALL DEVICE ERROR OVERRIDE 5
 CODE CODE ERROR 6
 CPLP CP-LP ERROR 20

SEEK= SEEK ADDRESS FOR RANDOM FILE
 X SEEK ADDRESS (DECIMAL)
 ,ABS ABSOLUTE SEEK ADDRESS .IFABS=1
 FORM SEEK=(N,ABS)

RECORD= RECORD COUNT OF SPACE OR MULTI-RECORD COMMAND
 XX RECORD COUNT 1-64 DECIMAL

SYNC= SYNCHRONIZE CONDITION
 RELC RELINQUISH CONTROL .IFRLC=1
 ROAD ROAD BLOCK .IFROD=1

LINK= I/O ENTRY QUEUEING
 F LINK FIRST .IFLKF=1
 S LINK SPECIAL (FIRST) .IFLKS=1

TYPE= I/O REQUEST TYPE (USER)
 SYOT SYSCUT (.MSYOT) .IFSYT=1

CALL I/O PROCESSOR

GEPR T&D GEPR (MGEPR) T AND D .IFGPR=1 .IFTAD=1

OPTION= ANY OPTION FORM OPTION=(OPTION1,OPTION2,.....) SPEC WAIT SPECIAL INTERRUPT OCCURED .IFSPC=1 CCALL COURTESY CALL .IFDCC=1 SYSIO SYSTEM I/O ENTRY REQUIRED .IFIOE=1 L2TYPE L2 SYSTEM CONSOLE I/O .IFL2T=1 AXPTW AUXILIARY PTW(DCW) USED .IFAX=1 NOABT NOT ABORT .IFNAB=1

4485 * 4486 * 000000 4487 PO,PS SET 0 PARAMETER STACK ODR TYPE=0 000005 4488 P1,PS SET 5 PARAMETER STACK ODR TYPE=1 000003 4489 P,IOCB SET 3 COMMAND BLOCK ODR 4490 4491 4492 005502 4493 PMMIOS NULL 4494 4495 4496 4497

VIA FMME CALLIO

005502 005426 6304 00 010 4498 EPPR PO,FLTIO IOS04915 005503 600221 4505 00 000 4499 STP PO,SVFLT,P,SSA SET VICARIOUS FLAG IOS04920 005504 001764 4704 07 000 4500 LDP PO,SSR,DL 005505 001761 4704 07 000 4501 LDP PO,CTYP,DL TEST MODE 005506 200000 6230 00 000 4502 EAX3 .FFMOD PREP X3 CALL7610 005507 000010 7251 00 000 4503 LXL5 .WISR,PO GET ISR WORD 0 ITP,1100 005510 000160 3650 03 000 4504 ANX5 =0160,DU ISOLATE WSR# ITP,1110 005511 000140 1050 03 000 4505 CMPX5 6*16,DU IS IT WSR 6/7 ITP,1120 005512 000002 6020 04 000 4506 TNC 2,IC NO ANON1070 005513 000001 2630 03 000 4507 ORX3 .FBT17,DU YES, SET FLAG ANON1080 005514 001767 4754 07 000 4508 LDP P1,PS,PSR,DL 005515 500000 6735 00 000 4509 LDD P,IOCB,0,P1,PS GET COMMAND BLOCK DESCRIPTOR 005516 600005 7201 00 000 4510 LXLO .SATR,P,SSA GET PROCESS ATTRIBUTES EL8. 005517 005534 6050 00 010 4511 TPL NQ1 NON-PRIVITY EL8. 005520 000000 6230 00 000 4512 EAX3 0 YES, SET FLAG CALL7635 005521 300001 2351 00 000 4513 LDA .IWCBT,P,IOCB CALL7640 005522 400000 3150 07 000 4514 CANA .IFIOE,DL IT IT A SYSTEM ENTRY CALL7645 005523 005534 6000 00 010 4515 TZE NQ1 NO, NORMAL CALL7650 005524 012534 7000 00 010 4516 FNQ0 TSX0 QUEUS GET SYSTEM ENTRY CALL7655 005525 000000 6240 14 000 4517 EAX4 0,4 DID WE GET IT CALL7660 005526 005541 6010 00 010 4518 TNZ FNQ11 YES CALL7665 005527 4519 .CALLX .MDISP,4,N NO, WAIT CALL7670

CALL I/O PROCESSOR

							INHIB	SAVE,ON			
		005527					ICLIMB	SD.SVX,,.MDISP*64+4,EAXO			
005527	005704713400	000					VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.			
005530	000000606122	000					VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX			
005531	005524 7100 00 010	4520					INHIB	RESTORE			
		4521 *					TRA	FNQO	& TRY AGAIN		CALL7675
		005532									CALL7680
			4522	FNQ1			.CALLX	.MDISP,4,N	WAIT A WHILE		CALL7685
		005532					INHIB	SAVE,ON			
							ICLIMB	SD.SVX,,.MDISP*64+4,EAXO			
005532	005704713400	000					VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.			
005533	000000606122	000					VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX			
005534	012477 7000 00 010	4523	NQ1				INHIB	RESTORE			
							ETSXO	QUEUE	GET AN I/O ENTRY		CALL7690
005535	000000 6240 14 000	4524					EAX4	0,4	DID WE GET ONE		CALL7695
005536	005532 6000 00 010	4525					TZE	FNQ1	NO		CALL7700
005537	000001 3030 03 000	4526					CANX3	.FBT17,DU	IS I/O USER INITIATED		ITP.1160
005540	005542 6010 00 010	4527					TNZ	FNQ11+1	YES, FORCE SAVE PERMISSION		ITP.1170
		005541									
			4528	FNQ11			NULL				
005541	001761 4714 07 000	4529					LDP	P.IOQ,,.CTYP,DL	CHANGE TYPE TO 0		
005542	001767 4754 07 000	4530					LDP	P1.PS,,.PSR,DL	OTHER IN PARAMETER STACK		
005543	300001 2351 00 000	4531					LDA	.IWCBT,,.P.IOCB	TEST CONTROL BIT		
005544	000002 6200 00 000	4532					EAXO	2	PARAMETER ADDRESS		
005545	100000 3150 03 000	4533					CANA	.IFDD1,DU	IS PRESENT FIRST DATA REGION		
005546	005552 6000 00 010	4534					TZE	SNDDD	NO		
005547	500000 6705 10 000	4535					LDD	PO,0,0,P1.PS	GET DESCRIPTOR		
005550	100016 0505 14 000	4536					STD	PO,,.WEDRI,4,P.IOQ	SAVE IN ENTRY		
005551	000002 6200 10 000	4537					EAXO	2,0	BUMP UP PSR		
		4538 *									
		005552									
			4539	SNDDD			NULL				
005552	040000 3150 03 000	4540					CANA	.IFDD2,DU	IS PRESENT SECOND DATA REGION		
005553	005557 6000 00 010	4541					TZE	CCDD	NO		
005554	500000 6705 10 000	4542					LDD	PO,0,C,P1.PS	GET DESCRIPTOR		
005555	100020 0505 14 000	4543					STD	PO,,.WEDRF,4,P.IOQ	SAVE IN ENTRY		
005556	000002 6200 10 000	4544					EAXO	2,0	BUMP UP PSR		
		4545 *									
		005557									
			4546	CCDD			NULL				
005557	001761 4714 07 000	4547					LDP	P.IOQ,,.CTYP,DL	SET IOQ T=0		ITP.1200
005560	100014 0535 14 000	4548					STD	P.IOCB,,.WEICB,4,P.IOQ	SAVE COMMAND BLOCK DESCR		ITP.1210
005561	020000 3150 03 000	4549					CANA	.IFDDC,DU	IS PRESENT COURTESY CALL		
005562	005565 6000 00 010	4550					TZE	DEND			ITP.1140
005563	500000 6705 10 000	4551					LDD	PO,0,C,P1.PS	GET DESCRIPTOR		
005564	100022 0505 14 000	4552					STD	PO,,.WEIOE,4,P.IOQ	SAVE IN ENTRY		
005565	006204 4704 07 000	4553	DEND				LDP	PO,SD.PSH,DL	GET PUSH DESCRIPTOR		ITP.1230
005566	100014 7251 14 000	4554					LXL5	.WEICE,4,P.IOQ	GET CMD BLK DESCR		29FW0200
005567	000160 3650 03 000	4555					ANX5	=0160,DU	GET WSR#		29FW0210
005570	000160 1050 03 000	4556					CMPX5	7*16,DU	IS WSR# 7		ITP.1240
005571	005602 6000 00 010	4557					TZE	DD7	YES		ITP.1250
005572	000040 1050 03 000	4558					CMPX5	2*16,DU	NO, IS IT 0/1		25FW0150
005573	005653 6020 00 010	4559					TNC	IOCALL	YES, FORGET TEST		25FW0160

CALL I/O PROCESSOR

005574	100013	4451	14	000	4560	SXL5	.WEIOS,4,P.IOQ	NO,SET ISR WSR#	ITP.1260	
005575	005614	2370	00	010	4561	LDAQ	DPUSH	GET PUSH SKELETON	ITP.1270	
005576	100013	2751	14	000	4562	ORA	.WEIOS,4,P.IOQ	FILL IN WSR#	ITP.1280	
005577	100024	7571	14	000	4563	STAQ	.WEEND,4,P.IOQ	STORE DESCRIPTOR TO PUSH	ITP.1290	
005600	006013	4704	07	000	4564	LDP	PO,SD,IOQ,DL	T=1	ITP.1300	
005601	000024	6705	14	000	4565	LDD	PO,WEEND,4,PO	LOAD PUSH FOR THIS WSR#	25FW0180	
005602	100015	2351	14	000	4566	LDA	.WEICB+1,4,P.IOQ	IOCB BASE	ITP.1320	
005603	000012	0350	07	000	4567	ADLA	.IWST2*2,DL	USE STATUS WORDS	ITP.1330	
005604	000016	6705	00	000	4568	LDD	PO,PH,PTC,PO	PTW SEGMENT	ITP.1340	
005605	000014	7710	00	000	4569	ARL	12		ITP.1350	
005606	000000	2351	05	000	4570	LDA	0,AL,PO	GET PTW	ITP.1360	
005607	000004	3150	07	000	4571	CANA	.FBT33,DL	IS IOM PRESENT BIT SET	ITP.1370	
005610	005653	6010	00	010	4572	TNZ	IOCALL	YES, NO SWEAT	ITP.1380	
005611	000227	2360	07	000	4573	LDQ	.AC227,DL	K20 - NON-WIRED CALLIO	EL8.	
005612	005373	7100	00	010	4574	TRA	INABQ	ABORT CALLER	ITP.1400	
005613	000000011007			000						
	005614				4575	DPUSH	EBSS	2	SD.PSH SKELETON	ITP.1410

CALL I/O PROCESSOR

005616		4577	SCALIO	NULL						CALL7765
		4578								
		4579								
005616		4580	NWCAIO	NULL						
		4581					V I A	.	A I N O S	
		4582								
		4583								
005616	005426	6304	00	010	4584	EPPR	PO,FLTIO			IOS04AAM
005617	600221	4505	00	000	4585	STP	PO,,SVFLT,,P.SSA			IOS04935
005620	000000	6230	00	000	4586	EAX3	0			
					4587					
005621	100001	2351	00	000	4588	SCALL	LDA .IWCBT,,F1			
005622	400000	3150	07	000	4589	CANA	.IFIOE,DL	NEED SYSTEM ENTRY		
005623	005632	6000	00	010	4590	TZE	FNQ2	NO, NORMAL		CALL7775
005624	012534	7000	00	010	4591	TSX0	QUEUE	GET SYSTEM I/O ENTRY		CALL7780
005625	000000	6240	14	000	4592	EAX4	0,4	DID WE GET IT		CALL7785
005626	005635	6010	00	010	4593	TNZ	FNQ21	YES		CALL7790
					4594	SYSEN2	.CALLX .MDISP,4,N	NO, WAIT &		CALL7795
							INHIB	SAVE,ON		
							ICLIMB	SD.SVX,,.MDISP*64+4,EAX0		
005627	005704	713400		000		VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.			
005630	000000	606122		000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX			
							INHIB	RESTORE		
005631	005621	7100	00	010	4595	TRA	SCALL	RETRY		CALL7800
					4596	*				CALL7805
005632	012477	7000	00	010	4597	FNQ2	ETSX0	QUEUE	GET AN I/O ENTRY	CALL7810
005633	000000	6240	14	000	4598	EAX4	0,4	DID WE GET ONE		CALL7815
005634	005627	6000	00	010	4599	TZE	SYSEN2	NO		CALL7820
					4600	*		YES		CALL7825
					4601	FNQ21	NULL			
005635	100024	6705	14	000	4602	LDD	PO,,WEEND,4,P.IOQ	GET COMMAND BLOCK DESCRIPTOR		
005636	001761	4714	07	000	4603	LDP	P.IOQ,,CTYP,DL	CHANGE TYPE TO ZERO (P.IOQ)		
005637	100024	2371	14	000	4604	LDAQ	.WEEND,4,P.IOQ			
005640	100014	7571	14	000	4605	STAQ	.WEICE,4,P.IOQ	MOVE COMMAND BLOCK DESCRIPTOR		
005641	000001	2351	00	000	4606	LDA	.IWCBT,,PO	TEST OTHER DESCRIPTOR		
005642	100000	3150	03	000	4607	CANA	.IFDD1,DU	IS PRESENT FIRST DATA REGION		
005643	005645	6000	00	010	4608	TZE	**2	NO		
005644	100016	0525	14	000	4609	STD	P2,,WEDRI,4,P.IOQ	YES, SAVE FIRST DATA REGION DESC.		
005645	040000	3150	03	000	4610	CANA	.IFDD2,DU	IS PRESENT SECOND DATA REGION		
005646	005650	6000	00	010	4611	TZE	**2	NO		
005647	100020	0535	14	000	4612	STD	P3,,WEDRF,4,P.IOQ	YES, SAVE SECOND DATA REGION DESC.		
005650	020000	3150	03	000	4613	CANA	.IFDDC,DU	IS PRESENT COURTESY CALL		
005651	005653	6000	00	010	4614	TZE	**2	NO		
005652	100022	0545	14	000	4615	STD	P4,,WEIOE,4,P.IOQ	YES, SAVE ENTRY DESCRIPTOR		
					4616	*	TRA	IOCALL		CALL8545

CALL I/O PROCESSOR

CALLIO COMMON ROUTINE

4618
4619
4620
4621
4622
4623 *

X3 .FEPRV (.FFMOD, .FFWIR)
X5 RETURN ADDRESS

					4624	IOCALL NULL						
005653	006013	4704	07	000	4625	LDP	PO,SD,IOQ,DL	IOQ W/T=1				CALL8340
005654	100024	4501	14	000	4626	STZ	.WEEND,4,P,IOQ	CLEAR				
005655	100025	4501	14	000	4627	STZ	.WEEND+1,4,P,IOQ					
005656	000014	6735	14	000	4628	LDD	P,IOCB,.WEICB,4,PO	GET CMD BLK DESCR				CALL8350
005657	000000	6350	13	000	4629	EAA	,3					
005660	000022	7710	00	000	4630	ARL	18					
005661	100001	2551	14	000	4631	ORSA	.WEPRV,4,P,IOQ	SET CURRENT .FEPRV				
					4632	INHIB	ON					IOS01930
005662	300006	2353	00	000	4633	LDA	6,,P,IOCB	TEST T=0,2 & SIZE=7				IOS01940
005663	300006	7553	00	000	4634	STA	6,,P,IOCB	TEST WRITE PERMIT				IOS01950
					4635	INHIB	OFF					IOS01960
005664	300001	2361	00	000	4636	LDQ	.IWCBT,,P,IOCB	GET CTL BITS				IOS01970
005665	013446	3160	00	010	4637	CANQ	CTLMSK					IOS01980
005666	013442	6010	00	010	4638	TNZ	IBCNF	CTL BIT ERROR				IOS01990
005667	000001	3030	03	000	4639	CANX3	.FBT17,DU	IS I/O TRUSTWORTHY				ANON1100
005670	000003	6000	04	000	4640	TZE	3,IC	YES				ANON1110
005671	777737	3760	03	000	4641	ANQ	=077737,DU	NO, DROP CONS + LOWER BITS				IOS02020
005672	013431	0110	00	010	4642	CBKMON NOP	IOCBCK	(TSX1 IF DEBUG OPTION)				IOS02030
005673	100013	7561	14	000	4643	STQ	.WEIOS,4,P,IOQ	SAVE CTL BITS				IOS02040
005674	020000	3160	03	000	4644	CANQ	.IFDDC,DU	TEST, COURTESY CALL				
005675	005707	6000	00	010	4645	TZE	NCCM	NO COURTESY CALL				
005676	200000	3030	03	000	4646	CANX3	.FFMOD,DU	TEST MASTER				IOS02140
005677	005703	6010	00	010	4647	TNZ	NCCM1	NO, FROM SLAVE				
005700	000004	2350	07	000	4648	LDA	.FCCMM,DL	SET FLAG CC MASTER				
005701	100004	2551	14	000	4649	ORSA	.WESCT,4,P,IOQ	IN ENTRY				
005702	005707	7100	00	010	4650	TRA	NCCM					IOS02160
					4651 *							IOS02170
005703	100022	7201	14	000	4652	NCCM1 LXLO	.WEIOE,4,P,IOQ	GET DESCRIPTOR				IOS02180
005704	000017	3600	03	000	4653	ANXO	=017,DU	TYPE CODE				IOS02190
005705	000013	1000	03	000	4654	CMPXO	11,DU	IS TYPE 11				
005706	005732	6010	00	010	4655	TNZ	EDESCE	ILLEGAL ENTRY DESC. TYPE				
					4656 *							
					005707	NCCM	NULL					
005707	014052	3160	00	010	4658	CANQ	=0200000000020	TEST PHYSICAL COMMAND				CALL7835
005710	005715	6000	00	010	4659	TZE	NPCD	NO, LOGICAL COMMAND				
					4660 *							
					005711	PCD	NULL					
005711	300007	2351	00	000	4662	LDA	.IWICM,,P,IOCB					
005712	100006	7551	14	000	4663	STA	.WEICM,4,P,IOQ	MOVE FIRST CMMAND TO ENTRY				
005713	300010	2351	00	000	4664	LDA	.IWFCM,,P,IOCB					
005714	100011	7551	14	000	4665	STA	.WEFCM,4,P,IOQ	MOVE SECOND COMMAND TO ENTRY				
					4666 *							
					005715	NPCD	NULL					

CALL I/O PROCESSOR

005715	300002	2351	00	000	4668	LDA	.IW DAT,,P.IOCB	SET DCW ADDRESS	
005716	100007	7551	14	000	4669	STA	.WEOFF,4,P.IOQ		
005717	000007	2350	07	000	4670	LDA	=07,DL	MASK DATA EVEN DESC. BASE	
005720	100000	3160	03	000	4671	CANQ	.IFDD1,DU	TEST DCW DATA ADDRESS	
005721	005724	6000	00	010	4672	TZE	DCCK1		
005722	100017	3151	14	000	4673	CANA	.WEDRI+1,4,P.IOQ	TEST DESC. BASE	
005723	005730	6010	00	010	4674	TNZ	BASER	ERROR BASE	
					4675	*			
					005724				
005724	040000	3160	03	000	4676	DCCK1	NULL		
005725	005734	6000	00	010	4677	CANQ	.IFDD2,DU	TEST FOR SECOND DATA REGION	
005726	100021	3151	14	000	4678	TZE	SGPBT		
005727	005734	6000	00	010	4679	CANA	.WEDRF+1,4,P.IOQ	TEST SECOND DESC	
					4680	TZE	SGPBT	OK	CALL7855
					005730				
005730	000210	2360	07	000	4681	BASER	NULL		
005731	005373	7100	00	010	4682	LDQ	.AC210,DL	K9 - DESCRIPTOR BASE ODD	EL8.
					4683	TRA	INABQ	ABORT	
					005732				
005732	000211	2360	07	000	4684	EDESC	NULL		
005733	005373	7100	00	010	4685	LDQ	.AC211,DL	K10 - DESCRIPTOR TYPE ERROR	EL8.
					4686	TRA	INABQ	ABORT	
					4687	*			
					005734				
005734	300003	2351	00	000	4688	SGPBT	NULL		
005735	000006	7710	00	000	4689	LDA	.IWGRR,,P.IOCB	GET GEPR OPTION CODE	
005736	000077	3750	07	000	4690	ARL	6		
005737	005750	6000	00	010	4691	ANA	=077,DL	GEPR OVERRIDE OPTION	
005740	000007	1150	07	000	4692	TZE	NGPCL	ZERO, NO OVERRIDE	
005741	000002	6020	04	000	4693	CMPA	7,DL	IS CODE 1-6	IOS02315
005742	000007	2350	07	000	4694	TNC	2,IC	YES	IOS02320
005743	004752	7230	05	010	4695	LDA	7,DL	NO, FORCE 7	IOS02325
005744	100005	4431	14	000	4696	LXL3	GPOPT,AL	GET OPTION CODE	IOS02330
005745	100004	7231	14	000	4697	SXL3	.WEPEF,4,P.IOQ	PUT IN I/O ENTRY	IOS02335
005746	004752	2630	05	010	4698	LXL3	.WESCT,4,P.IOQ		EL8.
005747	100004	4431	14	000	4699	ORX3	GPOPT,AL	SET GEPR OPTION	EL8.
					4700	SXL3	.WESCT,4,P.IOQ	SET GEPR OPTION	IOS02345
					4701	*			
					005750				
005750	000000	6230	00	000	4702	NGPCL	NULL		
005751	004000	3160	03	000	4703	EAX3	0	BUILD .FEPRV	
005752	005754	6000	00	010	4704	CANQ	.IFRLC,DU	IS RELINQUISH	
005753	020000	6230	13	000	4705	TZE	**2	NO	
005754	001000	3160	03	000	4706	EAX3	.FFRLC,3	SET RELINQUISH	
005755	005757	6000	00	010	4707	CANQ	.IFROD,DU	IS ROADBLOCK	
005756	010000	6230	13	000	4708	TZE	**2	NO	
005757	000400	3160	07	000	4709	EAX3	.FFROD,3	SET ROADBLOCK	
005760	005762	6000	00	010	4710	CANQ	.IFAUX,DL	IS AUX-PTW	
005761	004000	6230	13	000	4711	TZE	**2	NO	
005762	000010	3160	07	000	4712	EAX3	.FFAUX,3	SET AUX-PTW	
005763	005765	6000	00	010	4713	CANQ	.IFRS9,DL	IS DMM REQUEST	
005764	000400	6230	13	000	4714	TZE	**2	NO	
005765	000200	3160	03	000	4715	EAX3	.FFDMM,3	SET DMM SPECIAL REQUEST	
005766	006067	6000	00	010	4716	CANQ	.IFDCW,DU	IS %NODCW	
					4717	TZE	ISDCW	NO	

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006042	100012	7551	14	000	4768	STA	.WEFDC,4,P.I0Q	SET FIRST DCW IMAGE	
006043	040000	6230	13	000	4769	EAX3	.FFDCW,3	SET %NODCW BIT	
006044	006124	7100	00	010	4770	TRA	ISDCW1		
					4771 *				CALL7970
					4772	INHIB	ON		IOS01755
006045	777777	6352	00	000	4773	DCWER1 EAA	-1		IOS01760
006046	006051	7102	00	010	4774	TRA	DCWER+2		IOS01770
006047	777777	6352	00	000	4775	DCWER EAA	-1		IOS01780
006050	000000	7553	12	000	4776	STA	0,2,PC	RELEASE DCW	IOS01790
006051	000000	7553	11	000	4777	STA	0,1,PC		IOS01800
					4778	INHIB	OFF		IOS01810
006052	000212	2360	07	000	4779	LDQ	.AC212,DL	K11 - ERROR IN %NODCW SPEC	EL8.
006053	005373	7100	00	010	4780	TRA	INABQ		CALL7995
					4781 *				
					4782 *		DCW AREA NOT FOUND		
006054	006062	7020	00	010	4783	NDCWF1 TSX2	NDCWF		IOS01830
006055	005773	7100	00	010	4784	TRA	RGDCW2		IOS01840
006056	006062	7020	00	010	4785	NDCWF2 TSX2	NDCWF		IOS01850
006057	050100	6200	00	000	4786	EAX0	.DWSYT*1024-.DWIOS*1024+1024+64	RPT W/TZE	29FW1350
006060	000144	6220	00	000	4787	EAX2	.DWIOS		IOS01870
006061	006021	7100	00	010	4788	TRA	RGDCW3		IOS01880
		006062			4789	NDCWF	NULL		
		006062			4790	.ARELC		WAIT	
		006062				.CALLX	.MDISP,4,N		
		006062				INHIB	SAVE,ON		
		006062				ICLIMB	SD.SVX,,.MDISP*64+4,EAX0		
006062	005704713400			000		VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.		
006063	000000606122			000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX		
						INHIB	RESTORE		
006064	000000	7100	12	000	4791	TRA	0,2		IOS01900
					4792 *				
006065	000220	2360	07	000	4793	ISNG	LDQ .AC220,DL	BAD DESCRIPTOR TYPE	EL8.
006066	005373	7100	00	010	4794	TRA	INABQ	ABORT USER	EL8.
					4795 *				EL8.
					4796 *		%NODCW NOT PRESENT		EL8.
		006067			4797	ISDCW	NULL		
006067	100016	2351	14	000	4798	LDA	.WEDRI,4,P.I0Q	DD1	EL8.
006070	100020	2751	14	000	4799	ORA	.WEDRF,4,P.I0Q	D2	EL8.
006071	000015	3150	07	000	4800	CANA	=015,DL	ARE TYPES 0/2	EL8.
006072	006065	6010	00	010	4801	TNZ	ISNG	NO, TILT	EL8.
006073	000000	6350	13	000	4802	EAA	,3	SET .FEPRV IN TO ENTRY	
006074	000022	7710	00	000	4803	ARL	18		
006075	100001	2551	14	000	4804	ORSA	.WEPRV,4,P.I0Q	SET FOR DCWCK	
006076	100013	7561	14	000	4805	STQ	.WEIOS,4,P.I0Q	SAVE CONTROL BIT IMAGE	
006077	100000	3160	03	000	4806	CANQ	.IFDD1,DU	FIRST DATA REGION IS PRESENT	
006100	006112	6000	00	010	4807	TZE	NDCP1	NO	
006101	100016	2201	14	000	4808	LDX0	.WEDRI,4,P.I0Q		
006102	000001	0200	03	000	4809	ADLX0	1,DU		
006103	100024	7401	14	000	4810	STX0	.WEEND,4,P.I0Q	SET BOUND TO VALIDATE DCW POINTER	
006104	100007	2211	14	000	4811	LDX1	.WEOFF,4,P.I0Q	DCW ADDRESS	

CALL I/O PROCESSOR

006105	006013	4704	07	000	4812	LDP	PO,SD,IOG,DL		
006106	000016	6705	14	000	4813	LDD	PO, WEDRI,4,PO	DCW'S SEGMENT	
006107	013155	7020	00	010	4814	TSX2	DCWCK	VALIDATION	
					4815				
006110	100007	7411	14	000	4816	STX1	.WEOFF,4,P,IOQ	SET NEW DCW POINTER	
006111	100012	7551	14	000	4817	STA	.WEDFC,4,P,IOQ	SET FIRST DCW IMAGE	
					4818	*			
					4819	NDCP1	NULL		
006112	040000	3160	03	000	4820	CANQ	.IFDD2,DU	SECOND DATA REGION PRESENT	
006113	006124	6000	00	010	4821	TZE	ISDCW1	NO	I0S05560
006114	100020	2201	14	000	4822	LDX0	.WEDRF,4,P,IOQ		
006115	000001	0200	03	000	4823	ADLX0	1,DU		
006116	100024	7401	14	000	4824	STX0	.WEEND,4,P,IOQ	SET BOUND TO VALIDATE DCW POINTER	
006117	100007	7211	14	000	4825	LXL1	.WEOFF,4,P,IOQ	DCW ADDRESS	
006120	006013	4704	07	000	4826	LDP	PO,SD,IOG,DL		
006121	000020	6705	14	000	4827	LDD	PO, WEDRF,4,PO	DCW'S SEGMENT	
006122	013155	7020	00	010	4828	TSX2	DCWCK	VALIDATION	
					4829			X1 = DCW ADDRESS	
006123	100007	4411	14	000	4830	SXL1	.WEOFF,4,P,IOQ	SET NEW DCW ADDRESS	
					4831	ISDCW1	NULL		
006124	006204	4724	07	000	4832	LDP	P2,SD,PSH,DL	PREPARE PUSH	29FW1100
006125	000000	6350	13	000	4833	EAA	,3		
006126	000022	7710	00	000	4834	ARL	18	SET ANY BIT	
006127	100001	2551	14	000	4835	ORSA	.WEPRV,4,P,IOQ	IN .FEPRV	
					4836				
					4837			SET ANY SPECIAL BIT IN .WEPEP/.WESCT	
					4838				
006130	006251	3160	00	010	4839	CANQ	SPANY	ARE THERE ANY	CALL8005
006131	006240	6000	00	010	4840	TZE	NDNM	NO	CALL8010
006132	000004	3160	07	000	4841	CANQ	.IFRSA,DL	TEST SHARED PAT	29FW1120
006133	000002	6000	04	000	4842	TZE	2,IC	NO	29FW1130
006134	006202	4724	07	000	4843	LDP	P2,SD,SSH,DL	YES, USED SHARED PUSH	29FW1140
006135	020000	3160	07	000	4844	CANQ	.IFGPR,DL	IS GEPR I/O	
006136	006141	6000	00	010	4845	TZE	*+3	NO	
006137	002000	2350	07	000	4846	LDA	.FSGPR,DL	YES SET GEPR'S I/O BIT	
006140	100005	2551	14	000	4847	ORSA	.WEPEP,4,P,IOQ		
006141	000000	6350	00	000	4848	EAA	0		
006142	001000	3160	07	000	4849	CANQ	.IFNAE,DL	IS DONOT ABORT PRESENT	
006143	006145	6000	00	010	4850	TZE	*+2	NO	
006144	000200	2750	07	000	4851	ORA	.FNABT,DL	SET BIT	
006145	010000	3160	07	000	4852	CANQ	.IFSOT,DL	IS SYOT I/O	
006146	006150	6000	00	010	4853	TZE	*+2	NO	
006147	000020	2750	07	000	4854	ORA	.FSYOT,DL	SET BIT	
006150	004000	3160	07	000	4855	CANQ	.IFTAD,DL	IS TANDD I/O	
006151	006153	6000	00	010	4856	TZE	*+2	NO	
006152	200000	2750	03	000	4857	ORA	.FTAD,DU	SET BIT	
006153	000040	3160	03	000	4858	CANQ	.IFCNS,DL	IS CONSOLE I/O	
006154	006156	6000	00	010	4859	TZE	*+2	NO	
006155	000400	2750	07	000	4860	ORA	.FMTYI,DL	SET BIT	
006156	100004	2551	14	000	4861	ORSA	.WESCT,4,P,IOQ	SET ANY BITS IN ENTRY	

CALL I/O PROCESSOR

					4862							
006157	000040	3160	03	000	4863	CANQ	.IFCNS,DU	IF CONSOLE I/O REQUEST				
006160	006356	6010	00	010	4864	TNZ	ITYM	YES, GO TO CONSOLE PROCESSOR				
					4865			NO, REQUEST				
					4866			FC,PAT,SCT,DEVICE-NAME				
006161	000040	3160	07	000	4867	CANQ	.IFDNM,DL	IS DEVICE NAME REQUEST				
006162	006240	6000	00	010	4868	TZE	NDNM	NO,				
					4869 *							
					4870 *			DEVICE NAME PRESENT				
					4871 *			THE CURRENT SCT IS RETRIVED FROM THE SD.SCN TABLE.				
					4872 *							
006163	200002	6725	00	000	4873	LDD	P.PAT,PH.PAT,,P2				29FW1160	
006164	300000	2351	00	000	4874	LDA	.IWCMD,,P.IOCB					
006165	777777	3750	07	000	4875	ANA	-1,DL	GET DEVICE NAME				
006166	004154	1150	07	000	4876	CMPA	=3HOJ*,DL	IS FILE J*			29FWC810	
006167	006222	6000	00	010	4877	TZE	JSTAR	YES			29FWC820	
					4878	INHIB	ON					
					4879	.SHUT	.CRSCT,,P.CR					
006173	600214	7553	00	000	4880	STA	.STEMP+8,,P.SSA	SAVE NAME, FOR SEARCH				
006174	006140	4706	07	000	4881	LDP	PO,SD.SCN,DL					
006175	000000	2353	00	000	4882	LDA	0,,PO					
006176	000006	7712	00	000	4883	ARL	6					
006177	000000	6202	05	000	4884	EAXO	,AL	GET NAME TABLE SIZE+1				
006200	000777	3602	03	000	4885	ANXO	=0777,DU					
006201	777777	2362	03	000	4886	LDQ	-1,DU					
					4887	LOOKN1	NULL					
006202	000000	2353	10	000	4888	LDA	0,0,PC	GET NAME AND SCT ADDRESS				
006203	600214	2113	00	000	4889	CMK	.STEMP+8,,P.SSA					
006204	006213	6002	00	010	4890	TZE	FNDY1	FOUND				
006205	000001	1202	03	000	4891	SBLXO	1,DU	NOT FOUND, DECREMENT POINTER				
006206	006202	6012	00	010	4892	TNZ	LOOKN1	YET				
					4893 *							
					4894	.OPEN	.CRSCT,,P.CR	NOTHING, ILLEGAL REQUEST				
006211	000213	2362	07	000	4895	LDQ	.AC213,DL	K12 - DEVICE NAME NOT FOUND			EL8.	
006212	005373	7102	00	010	4896	TRA	INABQ	ABORT				
					4897 *							
					4898	FNDY1	NULL					
006213	000000	6212	01	000	4899	EAX1	,AU	GET SCT ADDRESS				
006214	037774	3612	03	000	4900	ANX1	.FPSCT,DU					
					4901	.OPEN	.CRSCT,,P.CR					
					4902	INHIB	OFF					
006217	006274	7100	00	010	4903	TRA	SCTG					
					4904 *							
					4905			SPECIAL REQUEST FOR JSTAR I/O			29FWC840	
					4906	JSTR2	.ARELC	WAIT			29FW0850	
							.CALLX	.MDISP,4,N			29FWC860	
							INHIB	SAVE,CN				
							ICLIMB	SD.SVX,,.MDISP*64+4,EAXO				
006220	005704713400			000		VFD	18/.MDISP*64+4,09/713,1/1,1/0,1/0,6/M.					
006221	000000606122			000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX					

CALL I/O PROCESSOR

006266	037777	3600	03	000	4950	ANXO	.FPTOF,DU	PAT BODY OFFSET	EL8.
006267	037777	1000	03	000	4951	CMPXO	.FADJ,DU	IS IT ADJACENT	EL8.
006270	000002	6010	04	000	4952	TNZ	2,IC	NO	EL8.
006271	000003	6200	12	000	4953	EAXO	.OFFS,2	YES, ADJUST IT	EL8.
006272	100024	4401	14	000	4954	SXLO	.WEEND,4,P.IOQ	SAVE IT IN I/O ENTRY	EL8.
006273	200000	2211	10	000	4955	LDX1	0,0,P.PAT	GET SCT PTR	EL8.
		006274			4956	SCTG	NULL		
006274	000000	6200	11	000	4957	EAXO	0,1	SCT PTR & FLAGS	CALL8115
006275	017774	3610	03	000	4958	ANX1	.FSCT1,DU		
006276	100004	2411	14	000	4959	ORSX1	.WESCT,4,P.IOQ	SET SCT ADDRESS	
006277	600000	3000	03	000	4960	CANXO	.FBTO+ .FET1,DU	PRESETECT OR EOF FLAGS	CALL8125
006300	006311	6000	00	010	4961	TZE	SCTG1	NO	CALL8130
006301	000000	6350	00	000	4962	EAA	0		
006302	400000	3000	03	000	4963	CANXO	=0400000,DU	IS PRESELECT REQUEST	
006303	006307	6000	00	010	4964	TZE	*+4	NO, EOF RECOVERY	CALL8140
006304	000002	2750	07	000	4965	ORA	.FPRSL,DL		
006305	200000	3000	03	000	4966	CANXO	=0200000,DU	IS NO EOF RECOVER REQUEST	
006306	006310	6000	00	010	4967	TZE	*+2		
006307	000100	2750	07	000	4968	ORA	.FNEOF,DL		
006310	100004	2551	14	000	4969	ORSA	.WESCT,4,P.IOQ	SET FLAG	
		006311			4970	SCTG1	NULL		CALL8150
006311	013354	7000	00	010	4971	TSXO	ILPCX	CALCULATE INDEX	
006312	005373	7100	00	010	4972	TRA	INABQ	ABCRT	
					4973	*			
					4974	*			
006313	100013	2361	14	000	4975	LDQ	.WEIOS,4,P.IOQ	TEST 'SPEC' REQUEST	
006314	000004	3160	07	000	4976	CANQ	.IFRSA,DL	IS THIS SHARED PAT I/O	ITP.1920
006315	006320	6000	00	010	4977	TZE	NOSP	NO	ITP.1930
006316	000000	6200	00	000	4978	EAXO	0		29FW1040
006317	100005	7401	14	000	4979	STXO	.WEPEF,4,P.IOQ	SET NO PAT PTR	29FW1050
		006320			4980	NOSP	NULL		ITP.1960
006320	006252	3160	00	010	4981	CANQ	CMDSP	SPEC OR CMD	CALL8160
006321	006352	6000	00	010	4982	TZE	NPCDR	NO	CALL8165
006322	000100	3160	03	000	4983	CANQ	.IFSPC,DU		
006323	006333	6000	00	010	4984	TZE	NSPCE	NO REQUESTED 'SPEC'	
006324	000000	2360	03	000	4985	LDQ	0,DU	SET FLAG, NO MINUS 'SPEC'	
		006325			4986	.CALL	.MIOS1,4	CALL 'SPEC' PROCESSOR	
						INHIB	SAVE,ON		
006325	000003	6306	04	6330		EPPRO	*+3,\$		
006326	700002	7103	00	000		TRA	.CRCAL,,F.CR		
006327	000320	000004		000		ZERO	.MIOS1,4		
						INHIB	RESTORE		
006330	100013	2361	14	000	4987	LDQ	.WEIOS,4,P.IOQ	RESTORE CONTROL BIT	
006331	000020	3160	07	000	4988	CANQ	.IFPCD,DL	IS PRESENT 'CMD'	
006332	006352	6000	00	010	4989	TZE	NPCDR	NO	
					4990			YES, GO TO LINK	
		006333			4991	NSPCE	NULL		CALL8180
006333	100006	2351	14	000	4992	LDA	.WEICM,4,P.IOQ	TEST CHANNEL COMMAND TYPE	
006334	770000	3750	07	000	4993	ANA	.FCCMD,DL		IOS04350
006335	100000	1150	07	000	4994	CMPA	=010000,DL	SINGLE CHARACTER COMMAND	

CALL I/O PROCESSOR

006336	006342	6010	00	010	4995	TNZ	++4	NO	
006337	100006	2351	14	000	4996	LDA	.WEICM,4,P.I0Q	YES, SET SINGLE CHARACTER	
006340	000030	7350	00	000	4997	ALS	24	IN ENTRY	
006341	100012	7551	14	000	4998	STA	.WEFDC,4,P.I0Q		
006342	000027	7720	00	000	4999	QRL	18+5	SET CONTROL BIT TO I/O ENTRY	
006343	003000	3760	07	000	5000	ANQ	.FFDD1+.FFDD2,DL	FOR 'CMD' SPECIFICATION	
006344	100001	2561	14	000	5001	ORSQ	.WEPRV,4,P.I0Q		
006345	100005	2201	14	000	5002	LDXO	.WEPEP,4,P.I0Q		
006346	004666	6000	00	010	5003	TZE	SLINK	NO PAT	IOS04295
					5004	INHIB	ON		IOS04297
006347	100000	2352	07	000	5005	LDA	.FBSYF,DL	SET PAT BUSY BIT	
006350	200000	2553	10	000	5006	ORSA	0,0,P.PAT		
006351	004666	7102	00	010	5007	TRA	SLINK	GOTO INK I/O	IOS04305
					5008	INHIB	OFF		IOS04307
					5009				
					006352	5010 NPCDR	NULL	NORMAL COMMAND SEQUENCE	
006352	200000	3160	03	000	5011	CANQ	.IFCMD,DU	TEST COMMAND TYPE	CALL8190
006353	004505	6010	00	010	5012	TNZ	EP2CAL-1	PHYSICAL	CALL8195
006354	777777	6250	00	000	5013	EAX5	-1	LOGICAL	CALL8200
006355	004506	7100	00	010	5014	TRA	EP2CAL	GO TO CHANNEL MODULE	

MASTER TYPEWRITER REQUEST

5016
 5017
 5018 *
 5019 * MASTER TYPEWRITER REQUEST
 5020 * BY IOCB2 OR IOCB4
 5021 *
 5022 * INPUT REGISTERS
 5023 * X4 I/C ENTRY ADDRESS
 5024 * X6 KPX
 5025 * X7 CPUNO
 5026 * QR CTL BITS
 5027 * ODR1 P. IOQ
 5028 * ODR3 P. IOCB
 5029 * ODR6 P. SSA
 5030 * ODR7 P. CR
 5031 *

IOS00960

5032 * OUTPUT REGISTERS
 5033 * X1 SCT ADDRESS
 5034 * X4 I/O ENTRY ADDRESS
 5035 * X6 KPX
 5036 * X7 CPUNO
 5037 * ODR1 P. IOQ
 5038 * ODR3 P. IOCB
 5039 * ODR6 P. SSA
 5040 * ODR7 P. CR
 5041 *

000003 5043 P. IOCB SET P3
 000002 5044 P. PAT SET P2

				006356	5046	ITYM	NULL			
006356	300000	7251	00	000	5047		LXL5	.IWCMD,,P.IOCB	GET MSG CODE	IOS0C970
006357	000077	3650	03	000	5048		ANX5	=077,DU	ISOLATE IT	IOS0C975
006360	000026	1050	03	000	5049		CMPX5	EMSCD-BMSCD,DU	IS CODE VALID	IOS0C980
006361	006371	6020	00	010	5050		TNC	ITYM1	YES	IOS00985
006362	000200	3160	07	000	5051		CANQ	.IFSCT,DL	IS SCT PRESENT BY GEPR	
006363	006367	6000	00	010	5052		TZE	ITYME	NO, ILLEGAL	
006364	300000	7221	00	000	5053		LXL2	.IWCMD,,P.IOCB	GET SCT ADDRESS	
006365	100004	2421	14	000	5054		ORSX2	.WESCT,4,P.IOQ	SET SCT ADDRESS	
006366	006375	7100	00	010	5055		TRA	NGSCT	GEPR SPECIAL REQUEST NO PAT	
				006367	5056		ITYME	NULL		
006367	000216	2360	07	000	5057		LDQ	.AC216,DL	K15 - MSG CODE OR FILECODE ILLEGAL	EL8.
006370	005373	7100	00	010	5058		TRA	INABQ	ABORT	
					5059					
				006371	5060		ITYM1	NULL		
006371	006556	2350	15	010	5061		LDA	BMSCD,5	GET TABLE ENTRY	IOS0C995
006372	000014	7710	00	000	5062		ARL	12		
006373	007777	3750	07	000	5063		ANA	=07777,DL	PICK-UP FILE CODE	
006374	006400	6010	00	010	5064		TNZ	LOOKF	ZERO FC, SPECIAL GEPR REQUEST	
				006375	5065		NGSCT	NULL		

MASTER TYPEWRITER REQUEST

006375	000000	2220	03	000	5066	LDX2	0,DU	NO PAT POINTER	
006376	000000	6250	00	000	5067	EAX5	0	USE SPECIAL GEEPR ENTRY	CALL8570
006377	006402	7100	00	010	5068	TRA	STOPN		
					5069				
					006400				
006400	013100	7010	00	010	5070	LOOKF	NULL		
006401	006367	7100	00	010	5071	TSX1	FNDFC	GET PAT POINTER	IOS02390
					5072	TRA	ITYME	PAT NOT FOUND, ILLEGAL	
					5073				
					006402				
006402	100005	7421	14	000	5074	STOPN	NULL		
006403	000000	1020	03	000	5075	STX2	.WEPEP,4,P.I0Q	SET PAT POINTER IN ENTRY	
006404	006415	6000	00	010	5076	CMPX2	0,DU	IS NO PAT, SPECIAL GEPR	
					5077	TZE	PROG		
					5078				
006405	000000	6210	12	000	5079	EAX1	,2	GET SCT ADDRESS FROM SD. SCN	
006406	013324	7000	00	010	5080	TSX0	TYNAM	IF SYSTEM CONSOLE	
					5081			X1 - SCT ADDRESS	
006407	006414	7100	00	010	5082	TRA	PROG1	SYSTEM CONSOLE	
006410	200000	2211	12	000	5083	LDX1	0,2,P.PAT	NOT SYSTEM CONSOLE	
006411	037777	3610	03	000	5084	ANX1	=037777,DU		
006412	200000	2211	11	000	5085	LDX1	0,1,P.PAT	GET SCT ADDRESS FROM PAT BODY	
006413	037774	3610	03	000	5086	ANX1	.FPSCT,DU		
					006414				
006414	100004	2411	14	000	5087	PROG1	NULL		
					5088	ORSX1	.WESCT,4,P.I0Q	SET SCT ADDRESS IN ENTRY	
					5089				
					006415				
006415	006204	4754	07	000	5090	PROG	NULL		
006416	500034	6755	00	000	5091	LDP	P5,SD.PSH,DL	GET DCW SEGMENT DESCRIPTOR	
006417	300000	2351	00	000	5092	LDD	P5,PH.DCW,,P5		
006420	777000	3750	03	000	5093	LDA	.IWCMD,,P.IOCB	GET COMMAND TYPE	
006421	002000	1150	03	000	5094	ANA	=0777C00,DU	W OR WR	
006422	006504	6000	00	010	5095	CMPA	=0200C,DU	IS WRITE	
006423	003000	1150	03	000	5096	TZE	ITYM2	YES	
006424	006427	6000	00	010	5097	CMPA	=0300C,DU	IS WRITE THEN READ	
					5098	TZE	ITYM4	YES	
					5099			NO, ILLEGAL COMMAND	
					006425				
006425	000217	2360	07	000	5100	ITYME1	NULL		
006426	005373	7100	00	010	5101	LDQ	.AC217,DL	K16 - COMMAND/MODE INVALID	EL8.
					5102	TRA	INABQ	ABORT	
					5103				
					006427				
006427	006013	4704	07	000	5104	ITYM4	NULL	WRITE THEN READ REQUEST	
006430	000020	6705	14	000	5105	LDP	PO,SD.I0Q,DL		
006431	100007	7231	14	000	5106	LDD	PO,.WEDRF,4,PO	GET READ AREA DESCRIPTOR	
006432	300000	2351	00	000	5107	LXL3	.WEOFF,4,P.I0Q	GET DCW ADDRESS	
006433	000777	3750	03	000	5108	LDA	.IWCMD,,P.IOCB	TEST MODE	
006434	000002	1150	03	000	5109	ANA	=0777,DU		
006435	006462	6000	00	010	5110	CMPA	2,DU	IS BCD	
006436	000003	1150	03	000	5111	TZE	BCDWR	YES	
006437	006425	6010	00	010	5112	CMPA	3,DU	IS ASCII	
					5113	TNZ	ITYME1	NO, ILLEGAL	
					5114				
					5115			ASCII REQUEST	

MASTER TYPEWRITER REQUEST

006440	100001	2361	14	000	5116				
					5117	LDQ	.WEPRV,4,P.IOQ	WHERE IS THE DCW	
006441	044000	3160	07	000	5118	CANQ	.FFDCW+.FFAUX,DL	IS IN DCW SEGMENT	
006442	006446	6000	00	010	5119	TZE	ITYM41	NO	
006443	500000	7201	13	000	5120	LXLO	0,3,P5	GET READ WORD COUNT	
006444	500000	2231	13	000	5121	LDX3	0,3,P5	YES, GET DATA REGION ADDRESS FROM DCW	
006445	006450	7100	00	010	5122	TRA	ITYM42		
					5123				
	006446				5124	ITYM41	NULL		
006446	000000	7201	13	000	5125	LXLO	0,3,PO	GET READ WORD COUNT	
006447	000000	2231	13	000	5126	LDX3	0,3,PC	DATA REGION ADDRESS	
	006450				5127	ITYM42	NULL		
006450	006555	2360	00	010	5128	LDQ	ASCBLK	GET ASCII BLANK CODE	
006451	000000	7561	13	000	5129	STQ	0,3,PC	CLEAR READ AREA BY BLANK	
006452	000001	1000	03	000	5130	CMPXD	1,DU	IS ONE WORD	
006453	006455	6000	00	010	5131	TZE	*+2	YES	
006454	000001	7561	13	000	5132	STQ	1,3,PC		
006455	014054	2360	00	010	5133	LDQ	=0330000C40002		
006456	100006	7561	14	000	5134	STQ	.WEICM,4,P.IOQ	SET COMMAND WTYPASR	
006457	014055	2360	00	010	5135	LDQ	=0230000C40001		
006460	100011	7561	14	000	5136	STQ	.WEFCM,4,P.IOQ	SET COMMAND RTYPAS	
006461	006517	7100	00	010	5137	TRA	ITYM3		
					5138				
	006462				5139	BCDWR	NULL	BCD REQUEST	
006462	100001	2361	14	000	5140	LDQ	.WEPRV,4,P.IOQ	WHERE IS THE DCW	
006463	044000	3160	07	000	5141	CANQ	.FFDCW+.FFAUX,DL	IN DCW SEGMENT	
006464	006470	6000	00	010	5142	TZE	BCDWR1	NO	
006465	500000	7201	13	000	5143	LXLO	0,3,P5	GET READ WORD COUNT	
006466	500000	2231	13	000	5144	LDX3	0,3,P5	YES, GET DATA REGION ADDRESS	
006467	006472	7100	00	010	5145	TRA	BCDWR2		
					5146				
	006470				5147	BCDWR1	NULL		
006470	000000	7201	13	000	5148	LXLO	0,3,PO	GET READ WORD COUNT	
006471	000000	2231	13	000	5149	LDX3	0,3,PC	GET DATA REGION ADDRESS	
	006472				5150	BCDWR2	NULL		
006472	014056	2360	00	010	5151	LDQ	=0202020202020	GET BCD BLANK	
006473	000000	7561	13	000	5152	STQ	0,3,PC	CLEAR READ AREA BY BLANK	
006474	000001	1000	03	000	5153	CMPXD	1,DU	IS ONE WORD	
006475	006477	6000	00	010	5154	TZE	*+2	YES	
006476	000001	7561	13	000	5155	STQ	1,3,PC		
006477	014057	2360	00	010	5156	LDQ	=0130000C40002		
006500	100006	7561	14	000	5157	STQ	.WEICM,4,P.IOQ	SET COMMAND WTYPR	
006501	014060	2360	00	010	5158	LDQ	=0030000C40001		
006502	100011	7561	14	000	5159	STQ	.WEFCM,4,P.IOQ	SET COMMAND RTYP	
006503	006517	7100	00	010	5160	TRA	ITYM3		
					5161				
					5162			WRITE ONLY REQUEST	
					5163				
	006504				5164	ITYM2	NULL		
006504	300000	2351	00	000	5165	LDA	.IWCMD,,P.IOCB	TEST MODE TO SET TAB CODE AND COMMAND	

MASTER TYPEWRITER REQUEST

006505	000777	3750	03	000	5166	ANA	=0777,DU	
006506	000002	1150	03	000	5167	CMPA	2,DU	IS BCD
006507	006514	6000	00	010	5168	TZE	ITYM2B	
006510	330000	2360	03	000	5169	LDQ	=0330C00,DU	IS ASCII, ASCII WRITE WTYPAS
006511	000003	1150	03	000	5170	CMPA	3,DU	
006512	006425	6010	00	010	5171	TNZ	ITYME1	IS NOT ASCII, ILLEGAL
006513	006515	7100	00	010	5172	TRA	*+2	
					5173			
					5174	ITYM2B	NULL	
006514	130000	2360	03	000	5175	LDQ	=0130000,DU	IS BCD, BCD WRITE WTYP
006515	100006	7561	14	000	5176	STQ	.WEICM,4,P.IOQ	SET COMMAND
006516	100011	7561	14	000	5177	STQ	.WEFCM,4,P.IOQ	
					5178			
					5179			
					5180	ITYM3	NULL	
006517	006013	4704	07	000	5181	LDP	PO,SD.IOQ,DL	
006520	000016	6705	14	000	5182	LDD	PO,.WEDRI,4,PO	GET WRITE DATA REGION DESCRIPTOR
006521	100007	2211	14	000	5183	LDX1	.WECFF,4,P.IOQ	DCW ADDRESS
006522	100001	2361	14	000	5184	LDQ	.WEPRV,4,P.IOQ	
006523	044000	3160	07	000	5185	CANQ	.FFDCW+.FFAUX,DL	WHERE IS THE DCW
006524	006527	6000	00	010	5186	TZE	ITYM32	IS IN DCW SEGMENT
006525	500000	2211	11	000	5187	LDX1	0,1,P5	GET DATA REGION ADDRESS
006526	006530	7100	00	010	5188	TRA	ITYM31	
					5189			
					5190	ITYM32	NULL	
006527	000000	2211	11	000	5191	LDX1	0,1,PO	GET DATA REGION ADDRESS
					5192	ITYM31	NULL	
006530	006556	2350	15	010	5193	LDA	BMSCD,5	
006531	000011	7710	00	000	5194	ARL	12-3	GET TAB CODE TABLE INDEX
006532	006603	2360	01	010	5195	LDQ	TABS1-1,AU	
006533	000000	7561	11	000	5196	STQ	0,1,PC	SET ONE
006534	006611	2360	01	010	5197	LDQ	TABS2-1,AU	
006535	000001	7561	11	000	5198	STQ	1,1,PC	SET TWO
006536	002000	2350	07	000	5199	LDA	.FFDD1,DL	SET FLAG, PRESENT FIRST DATA
006537	100001	2551	14	000	5200	ORSA	.WEPRV,4,P.IOQ	
					5201			
					5202			
					5203			
006540	100013	2361	14	000	5204	LDQ	.WEIOS,4,P.IOQ	TEST 'SPEC' REQUEST
006541	000100	3160	03	000	5205	CANQ	.IFSPC,DU	
006542	006547	6000	00	010	5206	TZE	NTSPC	NO REQUESTED
006543	000000	2360	03	000	5207	LDQ	0,DU	REQUESTED, SET FALG
					5208	.CALL	.MIOS1,4	CALL 'SPEC' PROCESSOR
						INHIB	SAVE,CN	
006544	000003	6306	04	6547		EPPRO	*+3,\$	
006545	700002	7103	00	000		TRA	.CRCAL,,P.CR	
006546	000320	000004		000		ZERO	.MIOS1,4	
						INHIB	RESTORE	
					5209			
					5210	NTSPC	NULL	
					006547			

IOS04340

MASTER TYPEWRITER REQUEST

006547	010000	2350	03	000	5211	LDA	.TGEPR,DU	GEPR IN CONTROL	
006550	600017	3151	00	000	5212	CANA	.STATE,,P.SSA		
006551	004666	6000	00	010	5213	TZE	SLINK	NO, LINK NORMAL	IOS04315
006552	100001	7251	14	000	5214	LXL5	.WEPRV,4,P.I0Q	YES, LINK FIRST	IOS04320
006553	004701	6360	00	010	5215	EAQ	IRETN	SET RETURN	IOS04325
006554	004022	7100	00	010	5216	TRA	LINKF		IOS04330
					5217				
006555	040040040040			000	5218	ASCBLK	ASCII	1,	ASCII BLANKS
		040000			5219	ASCII	BOOL	040000	ASCII WRITE/READ FLAG
		006556			5220	BMSCD	NULL		MESSAGE CODE TABLE
006556	001000000000			000	5221	VFD	012/010,H12/00,012/00		SPEC GEPR, USE ENTRY SCT
006557	001063540001			000	5222	VFD	012/010,H12/T*,012/01		MT ERR, TY REPLY
006560	001054630002			000	5223	VFD	012/010,H12/*T,012/02		OTHER ERR, TY REPLY
006561	003063540003			000	5224	VFD	012/030,H12/T*,012/03		MT ERR THRESHOLD
006562	003054630004			000	5225	VFD	012/030,H12/*T,012/04		OTHER ERR THRESHOLD
006563	002063540005			000	5226	VFD	012/020,H12/T*,012/05		MOUNT-DISMOUNT*READY
006564	002054630006			000	5227	VFD	012/020,H12/*T,012/06		CR-CP INFO
006565	004063610007			000	5228	VFD	012/040,H12/T/,012/07		SRT-FIN
006566	004063610010			000	5229	VFD	012/040,H12/T/,012/10		ABT
006567	002061630011			000	5230	VFD	012/020,H12//T,012/11		ALLOC RETRIEVE
006570	003063610012			000	5231	VFD	012/030,H12/T/,012/12		JOB DELAYED
006571	002063610013			000	5232	VFD	012/020,H12/T/,012/13		COMMENT CARDS
006572	001063610014			000	5233	VFD	012/010,H12/T/,012/14		GEPOP TY1
006573	001063540015			000	5234	VFD	012/010,H12/T*,012/15		GEPOP TY2
006574	001054630016			000	5235	VFD	012/010,H12/*T,012/16		GEPOP TY3
006575	001061630017			000	5236	VFD	012/010,H12//T,012/17		GEPOP TY4
006576	004063610020			000	5237	VFD	012/040,H12/T/,012/20		REMOTE GEIN-SYSOUT
006577	004063610021			000	5238	VFD	012/040,H12/T/,012/21		TSS LINK SHORTAGE
006600	004063610022			000	5239	VFD	012/040,H12/T/,012/22		TSS BAD FILE STATUS
006601	004063610023			000	5240	VFD	012/040,H12/T/,012/23		TSS SRT-FIN
006602	006065540024			000	5241	VFD	012/060,H12/V*,012/24		VIDEO
006603	006000000025			000	5242	VFD	012/060,H12/00,012/25		SCC TAB SET/CLEAR
		006604			5243	EMSCD	NULL		
		006604			5244	TABS1	NULL		
006604	770017171717			000	5245	OCT	770017171717	1 CARRIAGE RETURN	-CODE1
006605	770017177740			000	5246	OCT	770017177740	1 CR AND 1 TAB	-CODE2
006606	770017177740			000	5247	OCT	770017177740	1 CR AND 1 TAB	-CODE3
006607	770017177740			000	5248	OCT	770017177740	1 CR AND 1 TAB	-CODE4
006610	770017177740			000	5249	OCT	770017177740	1 CR AND 1 TAB	-CODE5
006611	000000000000			000	5250	OCT	0	ASCII NULL CHARACTERS	-CODE6
		006612			5251	TABS2	NULL		
006612	171717171717			000	5252	OCT	171717171717	AND NO TABS	-CODE1
006613	171717171717			000	5253	OCT	171717171717	AND NO TABS	-CODE2
006614	774017171717			000	5254	OCT	774017171717	AND 1 TAB	-CODE3
006615	774077401717			000	5255	OCT	774077401717	AND 2 TABS	-CODE4
006616	774077407740			000	5256	OCT	774077407740	AND 3 TABS	-CODE5
006617	000000000000			000	5257	OCT	0	ASCII NULL CHARACTERS	-CODE6

EP7 SPUNK (SPECIAL .ULINK INTERFACE FOR DNET)

		5259 *							
		5260 *	EP #7	SPUNK					
		5261 *		.ULINK ROUTINE WITHOUT .CALL/.EXIT INTERFACE					
		5262 *							
		5263 *		P2 = RETURN REGISTER					
		5264 *							
		5265	INHIB	ON					
		5266 *							
	006620	5267	SPUNK	NULL					
		5268							
	006620	5269	.ULINK						
006620	012644		TSX0	ULINK					
		5270							
006621	200000	5271	TRA	0,1,P2	RETURN				IOS06630
		5272 *							
		5273	INHIB	OFF					

C2 EP 12 RSMCH (RESUME I/O ON CHANNEL)

5325 * THIS ROUTINE RESUMES I/O ON A SPECIFIED CHANNEL.
 5326 * INPUT REGISTERS
 5327 * X1= SCT ADDRESS
 5328 * X6= KPX
 5329 * X7= CFUNO
 5330 *
 5331 * ONLY REGISTERS X6-X7 ARE RESTORED ON RETURN
 5332 *
 5333 * GEEPR CALLS THIS ROUTINE AFTER TAKING STATUS RETURN AND/OR
 5334 * ABORT ACTION. THE STOP FLAG IN THE DEVICE (AND CHANNEL) SCT
 5335 * FOR THE ERROR I/C ENTRY HAS BEEN RESET. THIS ROUTINE IS NOT
 5336 * CALLED FOR NORMAL REISSUE OF GEEPR I/O.
 5337 *

		006656	5338 RSMCH	NULL		
006656	013354	7000 00 010	5339	TSX0	ILPCX	CALCULATE LOG.PRIM.CH.INDEX
006657	000000	0110 00 000	5340	NOP		ERROR RETURN
		006660	5341	.SHUT	.CRQGT,,F.CR	
			5342	INHIB	ON	
006663	007347	7032 00 010	5343	TSX3	STIO	CHECK IF I/O CAN BE STARTED AND START
006664	006133	4706 07 000	5344	LDP	PO,SD,KL,DL	
006665	000044	2263 17 000	5345	LDX6	.KLPRG,7,PO	GET KPX
			5346	INHIB	OFF	
006666	012374	7100 00 010	5347	TRA	RLXIT	EXIT

EL8.

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

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5349 *
5350 *
5351 *
5352 * ACTFL ACCEPTS LOGICAL RECORD INPUT FOR ACCT FILE
5353 * AND A DEDICATED MT OR TWO DISC FILES ARE REQUIRED
5354 *
5355 *
5356 * ACTFL MANAGES THE FOLLOWING CELLES
5357 * .CRACF---CONTAINS ACT FILE STATUS,PAT,BUF POINT....
5358 * .CRSKT---I/O ENTRY SKELTON FOR ACCT
5359 * .CRSCH---STATISTICAL COLLECTION HEADER
5360 * .CRSCI---STATISTICAL COLLECTION INFORMATION
5361 * ACB SEG.---ACCOUNT BUFFER SEGMENT
5362 *
5363 *
5364 * CALLING SEQUENCE
5365 * LDD P2,VECTOR,$
5366 * .CALL .MIOS,13---P2 HAS LOGICAL RECORD INPUT
5367 *
5368 *
5369 *
000002 5370 P. DATA SET P2
5371 *
5372 *
5373 *
5374 *
006667 5375 ACTFL NULL START TO PROCESS ACCT FILE
5376 *
5377 INHIB ON
006667 5378 .SHUT .CRACF,,P.CR ACCT IS SHUT
006672 5379 ACTFI NULL ENTRY WITH GATE ALREADY SHUT
006672 5380 SREG ACFRG
006672 007150 7532 00 010 5381 LDP P3,SD,ACB,DL LOAD ACCT BUF SEG.
006673 006056 4736 07 000 5382 LDA .CRACF,,P.CR IS ACCT CONFIGURED
006674 700361 2353 00 000 5383 CANA =070000,DU
006675 070000 3152 03 000 5384 TZE ACFLE NO
006676 006763 6002 00 010 5385 CANA =0200000,DU IS IT INITIALIZED
006677 200000 3152 03 000 5386 TNZ ACFLE NO
006700 006763 6012 00 010 5387 ANA =0600,DU
006701 000600 3752 03 000 5388 CMPA =0600,DU
006702 000600 1152 03 000 5389 TZE ACFLE PURGE/LOSE -- IGNORE REQUEST
006703 006763 6002 00 010 5390 *
006704 700361 2353 00 000 5391 LDA .CRACF,,P.CR
5392 *
5393 *
006705 5394 NOTTP NULL
006705 200000 2213 00 000 5395 LDX1 0,,P. DATA LOAD LENGTH
006706 000002 1012 03 000 5396 CMPX1 2,DU
006707 006777 6022 00 010 5397 TNC ACFLF SPECIAL IDS L.R.
006710 200000 2353 00 000 5398 LDA 0,,P. DATA CHECK RECORD TYPE

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11FW0790

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

006711	000022	7352	00	000	5399	ALS	18		
006712	006763	6002	00	010	5400	TZE	ACFLE	ZERO IGNORE IT	
006713	700436	1153	00	000	5401	CMPA	.CRSCH,,P.CR	REGAL RECORD TYPE	
006714	006763	6052	00	010	5402	TPL	ACFLE		
006715	000000	2362	03	000	5403	LDQ	0,DU		
006716	000021	7772	00	000	5404	LLR	17	INDEX INTO .CRSCI GOES IN QL	
					5405	*			
006717	006723	6042	00	010	5406	TMI	*+4	BIT35(NOW-0) SHOWS IF ENTRY	
006720	000001	1362	07	000	5407	SBLQ	1,DL		
006721	400000	2352	07	000	5408	LDA	=0400C00,DL	IS IN UPPER OR LOWER HALF OF WD ENTRY	
006722	006724	7102	00	010	5409	TRA	*+2	BIT OFF , IS IN LOWER (EVEN REC. TYPE	
006723	400000	2352	03	000	5410	LDA	=04C0000,DU	IT,S IN UPPER RECORD TYPE	
					5411	*			
006724	700437	3153	06	000	5412	CANA	.CRSCI,QL,P.CR		
006725	006763	6012	00	010	5413	TNZ	ACFLE	IGNORE IT	
		006726			5414	ACFL1	NULL		
006726	700374	2223	00	000	5415	LDX2	.CRACF+11,,P.CR		
006727	700373	1223	00	000	5416	SBLX2	.CRACF+1C,,P.CR	GET CURRENT POSITIN	
006730	007145	7422	00	010	5417	STX2	ACTFT	NO OF WDS IN BUFFER	
					5418	*			
		006731			5419	IBUF1	NULL		
006731	000000	2222	03	000	5420	LDX2	** ,DU	CURRENT NO OF WDS LEFT	
006732	007145	1222	00	010	5421	SBLX2	ACTFT	LEAVE 1WD FOR POSSIBLE INTERNAL	
006733	007145	7422	00	010	5422	STX2	ACTFT		
006734	200000	2223	00	000	5423	LDX2	0,,P.DATA	LENGTH OF L. R. DATA	
006735	006741	6042	00	010	5424	TMI	CM I		
		006736			5425	ACFLA	NULL		
006736	000002	0222	03	000	5426	ADLX2	2,DU	PLUS USER CONTROL + RCW	
006737	000000	1022	03	000	5427	IBUF2	CMPX2	** ,DU	
006740	006747	6022	00	010	5428	TNC	ACFLB		
		006741			5429	CM I	NULL		
006741	200000	7223	00	000	5430	LXL2	0,,P.DATA	L.R. IS TOO LONG	
006742	000013	1022	03	000	5431	CMPX2	IDS,DU	IDS CODE	
006743	006773	6002	00	010	5432	TZE	ABTC	YES, ABORT	EL8.
		006744			5433	IBUF3	NULL		
006744	000000	2222	03	000	5434	LDX2	** ,DU		
006745	200000	7423	00	000	5435	STX2	0,,P.DATA	FORCE TO MAXIMUM	
006746	006736	7102	00	010	5436	TRA	ACFLA		
					5437	*			
		006747			5438	ACFLB	NULL		
006747	007145	1022	00	010	5439	CMPX2	ACTFT	ENOUGH ROOM IN CURRENT BUFFER	
006750	006777	6032	00	010	5440	TRC	ACFLF	NO	
006751	700374	2233	00	000	5441	LDX3	.CRACF+11,,P.CR	CURRENT BUFFER POSITION	
006752	777777	6352	12	000	5442	EAA	-1,2	FORMAT SRCW	IOS04525
006753	300000	7553	13	000	5443	STA	0,3,P3	STORE IT	
006754	000020	7712	00	000	5444	ARL	16		
006755	300001	5076	13	000	5445	A&DX	1,3,P3	SET NEXT WORD IN ACCT BUFFER	IOS04545
006756	000140	1007	40	000	5446	MLR	(1,1),(1,1)	MOVE DATA	
006757	200000	0000	05	000	5447	ADSC9	0,0,A,P.DATA		
006760	300000	0000	05	000	5448	ADSC9	0,0,AL,P3		

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

006761	377777	6233	12	000	5449	EAX3	-1,2,P3	SET NEXT BUFFER POSITION	I0S04555
006762	700374	7433	00	000	5450	STX3	.CRACF+11,,P.CR	STORE NEW CURRENT POSITION	
					006763	5451	ACFLE	NULL	
006763	007150	0732	00	010	5452	LREG	ACFRG	RELOAD REGISTERS	
					5453	*			
					5454	*			
					006764	5455	.OPEN	.CRACF,,P.CR	
006766	006133	4706	07	000	5456	LDP	PO,SD,KL,DL		
006767	000107	2343	17	000	5457	SZN	.KLINT,7,PO	DID IHLR MAKE CALL	I0S06090
006770	000000	6012	15	000	5458	TNZ	0,5	YES, RETURN TO IT	I0S06095
006771	000052	6757	00	000	5459	LDD	P.SSL,,KLSLV,,PO	RELOAD P.SSL	
006772	012374	7102	00	010	5460	TRA	RLXIT	EXIT	EL8.
					5461	*			
					006773	5462	ABTC	.OPEN	.CRACF,,P.CR
006775	000117	2362	07	000	5463	LDQ	.AC117,DL	D2 - IDS RECORD TOO LONG	EL8.
006776	005403	7102	00	010	5464	TRA	INABT		EL8.

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

Account ID	Process ID	Code	Mode	Priority	Op Code	Op Name	Description	File ID
	006777				5466	ACFLF	NULL	
					5467	*	NOT ENOUGH ROOM IN CURRENT BUFFER	
006777	006013	4716	07	000	5468	LDP	P.IOQ,SD,IOQ,DL GET IOQ SEGMENT	IOS01140
007000	001761	4716	07	000	5469	LDP	P.IOQ,CTYP,DL	IOS01150
007001	700361	2353	00	000	5470	LDA	.CRACF,,P.CR	
007002	040000	3152	03	000	5471	CANA	=040000,DU TAPE FILE	
007003	007006	6002	00	010	5472	TZE	*+3 NO	
007004	000002	3152	03	000	5473	CANA	=0000002,DU TAPE--BTL NOT WRITTEN	
007005	006763	6002	00	010	5474	TZE	ACFLE IGNORE DATA TO PREVENT LOCK UP FAULT	
007006	400000	2352	03	000	5475	LDA	=0400000,DU	
007007	700361	3153	00	000	5476	CANA	.CRACF,,P.CR IS WRITING FLAG SET	
007010	007113	6012	00	010	5477	TNZ	ACFLG YES,NO CURRENT BUFFER AVAILABLE	
007011	700361	2553	00	000	5478	ORSA	.CRACF,,P.CR SET WRITING FLAG	
007012	000001	1012	03	000	5479	CMPX1	1,DU	
007013	007127	6022	00	010	5480	TNC	EOF IDS JOURNAL EOF	
007014	007130	6002	00	010	5481	TZE	EOR IDS JOURNAL EOR	
					5482	*		
	007015				5483	ACFL3	NULL	
007015	700373	2233	00	000	5484	LDX3	.CRACF+10,,P.CR BEGINING OF BUF. TO WRITE	
007016	700361	7243	00	000	5485	LXL4	.CRACF,,P.CR GET LAST BLOCK SER#	
007017	000001	0242	03	000	5486	ADLX4	1,DU INCREMENT IT	
007020	300000	7443	13	000	5487	STX4	0,3,P3 STORE RECORD	
007021	700374	2243	00	000	5488	LDX4	.CRACF+11,,P.CR	
007022	700373	1243	00	000	5489	SBLX4	.CRACF+10,,P.CR LENGTH OF RECORD TO WRITE	
					5490	*		
	007023				5491	STTPD	NULL	
007023	300000	4443	00	000	5492	SXL4	0,,P3	
					5493	*	STORE WD CONT IN WRITE DCW	
007024	000001	1242	03	000	5494	SBLX4	1,DU	
007025	300000	4443	13	000	5495	SXL4	0,3,P3 STORE LENGTH OF PHYSICAL RECORD	
	007026				5496	BTL9	NULL	
007026	100023	2243	00	000	5497	LDX4	.WEACF,,P.IOQ X4 HAS ACCT I/O ENTRY ADDR	
					5498	*	.LINK LINK .WEACF ENTRY IN POP PROCESS BY ACCT	
					5499	*		
007027	100025	7527	14	000	5500	STWS	.WEEND+1,4,P.IOQ SAVE WSR LOWER	
	007030				5501	.SHUT	.CRGGT,,P.CR	29FW0170
007033	006024	4706	07	000	5502	LDP	PO,SD,PID,DL SET POP WS	
007034	000005	7727	00	000	5503	LDWS	1+.PNFOP+4,,PO SET WS FOR .PNPOP	IOS01170
007035	000401	3362	07	000	5504	LCQ	.RIOTM+1,DL	
007036	600117	3563	00	000	5505	ANSQ	.SRGST,,P.SSA RESET I/O COMPLT SINCE LAST LINK	
007037	000001	2352	03	000	5506	LDA	1,DU	
007040	600160	0553	00	000	5507	ASA	.SRGCT,,P.SSA INCREMENT LINKED CNT	
007041	100025	7727	14	000	5508	LDWS	.WEEND+1,4,P.IOQ RESTORE WSR 4-7	IOS01100
007042	100004	2213	14	000	5509	LDX1	.WESCT,4,P.IOQ GET SCT ADDR	
007043	017774	3612	03	000	5510	ANX1	.FSCT1,DU	
007044	700000	7223	11	000	5511	LXL2	0,1,P.CR	
007045	003774	3622	03	000	5512	ANX2	.FCHNX,DU GET LCPX	
007046	000000	6352	11	000	5513	EAA	0,1	
007047	000022	7712	00	000	5514	ARL	18 CALC LOG DEV INDX	
007050	701402	1353	12	000	5515	SBLA	.CRCT3,2,P.CR DEV SCT	

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

007051	000026	7352	00	000	5516	ALS	22		
007052	007700	3752	03	000	5517	ANA	=07700,DU		
007053	007147	7552	00	010	5518	STA	LOGNO		
007054	100000	7203	14	000	5519	LXLO	.WEST,4,P.IOQ		
007055	630000	3602	03	000	5520	ANX0	=0630000,DU		
007056	007147	2602	00	010	5521	ORX0	LOGNO	SET LOG DEV #	
007057	000002	2602	03	000	5522	ORX0	2,DU	AND SET LINKED STATUS	
007060	100000	4403	14	000	5523	SXLO	.WEST,4,P.IOQ	SET IT	
					5524	*			
					5525	*	CHAIN ACCT I/O ENTRY TO CHANNEL MAIL BOX		
					5526	*			
007061	000000	2202	03	000	5527	LDX0	0,DU		
007062	701401	2233	12	000	5528	LDX3	.CRCT2,2,P.CR	GET LAST POINTER	
007063	007071	6012	00	010	5529	TNZ	LFST	LINK FIRST	
007064	701401	7443	12	000	5530	STX4	.CRCT2,2,P.CR	SET FIRST PTR	
007065	100001	7403	14	000	5531	STX0	.WEPRV,4,P.IOQ	SET BACK WARD PTR	
007066	100000	7403	14	000	5532	STX0	.WEST,4,P.IOQ		
007067	701402	7443	12	000	5533	STX4	.CRCT3,2,P.CR		
007070	007076	7102	00	010	5534	TRA	ACNEX		
		007071			5535	LFST	NULL		
007071	701401	2233	12	000	5536	LDX3	.CRCT2,2,P.CR	GET LAST PTR	
007072	701401	7443	12	000	5537	STX4	.CRCT2,2,P.CR	STORE NEW FORWARD PTR	
007073	100001	7443	13	000	5538	STX4	.WEPRV,3,P.IOQ		
007074	100000	7433	14	000	5539	STX3	.WEST,4,P.IOQ		
007075	100001	7403	14	000	5540	STX0	.WEPRV,4,P.IOQ		
		007076			5541	ACNEX	NULL		
					5542	*			
007076	007347	7032	00	010	5543	TSX3	STIO	ISSUE START I/O	
					5544	*			
007077	700373	2223	00	000	5545	LDX2	.CRACF+10,,P.CR	SET NEW CURRENT POSITION	
007100	700374	7233	00	000	5546	LXL3	.CRACF+11,,P.CR		
007101	700373	7433	00	000	5547	STX3	.CRACF+10,,P.CR		
007102	000001	0232	03	000	5548	ADLX3	1,DU		
007103	700374	7433	00	000	5549	STX3	.CRACF+11,,P.CR	STORE NEW POSITION	
007104	700374	4423	00	000	5550	SXL2	.CRACF+11,,P.CR	AND ALTERNATE BUFFER	
007105	007150	0732	00	010	5551	LREG	ACFRG		
007106	200000	2213	00	000	5552	LDX1	0,,P.DATA		
007107	000002	1012	03	000	5553	CMPX1	2,DU	WAS END TAPE CALL	
007110	006763	6022	00	010	5554	TNC	ACFLE	NO EXIT BACK	
007111	006056	4736	07	000	5555	LDP	P3,SD,ACB,DL		
007112	006726	7102	00	010	5556	TRA	ACFL1	MOVE L.R. TO CURRENT BUFFER	
					5557	*			
		007113			5558	ACFLG	NULL	NOT ENOUGH ROOM IN CURRENT BUFFER	
					5559	*			
007113	006133	4706	07	000	5560	LDP	PD,SD,KL,DL		
007114	000107	2343	17	000	5561	SZN	.KLINT,7,PO	WAS CALL FROM IHLR	IOS06105
007115	007120	6002	00	010	5562	TZE	ACFLH	NO	IOS06110
007116	007146	0542	00	010	5563	ACS	LSTAC	COUNT OF NOLCST L.R.	
007117	006763	7102	00	010	5564	TRA	ACFLE	GO, OPEN GATE AND RETURN	
					5565	*			

EP13 ACTFL (PROCESS ACCOUNTING FILE REQUEST)

				5566 *					
		007120		5567 ACFLH	NULL				
007120	007150	0732 00 010		5568	LREG	ACFRG			
		007121		5569	.OPEN	.CRACF,,P.CR			
		007123		5570	.CALLX	.MDISP,16			
					INHIB	SAVE,CN			
007123	600220	7403 00 000			STXO	.STMPX,,P.SSA			
		007124			ICLIMB	SD.SVX,,.MDISP*64+16,EAXO			
007124	005720	7134 00 000			VFD	18/.MDISP*64+16,09/713,1/1,1/0,1/0,6/M.			
007125	000000	6061 22 000			VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX			
					INHIB	RESTORE			
				5571 *					
007126	006667	7102 00 010		5572	TRA	ACTFL		GO TRY IT AGAIN	
				5573 *					
				5574 *					
		007127		5575 EOF	NULL	=0000010,DU		SET EOF BIT	
007127	007131	7102 00 010		5576	TRA	EOR+1			
				5577 *					
		007130		5578 EOR	NULL				
007130	000004	2352 03 000		5579	LDA	=0000004,DU			
007131	700361	2553 00 000		5580	ORSA	.CRACF,,P.CR		REFLECT EOF EOR FLAG	
				5581 *					
007132	700374	2203 00 000		5582	LDXO	.CRACF+11,,P.CR			
007133	700373	1203 00 000		5583	SBLXO	.CRACF+10,,P.CR			
007134	000001	1002 03 000		5584	CMPXO	1,DU			
007135	007015	6012 00 010		5585	TNZ	ACFL3		GO , DUMP THE CURRENT BUFFER	
007136	040001	2352 07 000		5586	LDA	=040001,DL		NO BUFFER TO DUMP(LOAD REQUEST STATUS	
007137	100023	2223 00 000		5587	LDX2	.WEACF,,F.IOQ		REQUEST TO GET C.C	
007140	100006	7553 12 000		5588	STA	.WEICM,2,P.IOQ			
007141	100011	7553 12 000		5589	STA	.WEFCM,2,P.IOQ			
007142	002000	2352 07 000		5590	LDA	.FFDD1,DL		RESET DATA FLAG	
007143	100001	6553 12 000		5591	ERSA	.WEPRV,2,P.IOQ			
007144	007026	7102 00 010		5592	TRA	BTL9			
				5593	INHIB	OFF			
				5594 *					
				5595 *					
		007145		5596 ACTFT	BSS	1		TEMP. STORAGE	
007146	000000000000	000		5597 LSTAC	OCT	0		LOST ACCT COUNT	
007147	000000000000	000		5598 LOGNO	OCT	0			
		007150		5599	EIGHT				
		007150		5600 ACFRG	BSS	8			
				5601 *					
		000013		5602 IDS	BOOL	13			

ACTFL COURTESY CALL ROUTINE

5605 *
 5606 *
 5607 *
 5608 * THIS ROUTINE IS EXECUTED AS A POPM PROCESS WHEN
 5609 * I/O COMPLETION ON ACCOUNTING FILE I/O WITH C.C
 5610 *
 5611 * STATUS IS CHECKED ,WITH TAPE EXCHANGE PERFORMED
 5612 * WHEN REQUESTED AS I/O HAS COMPLETED SATISFACTORY, POPM
 5613 * REFRESHES A .WEACF I/O ENTRY, AND LINKS IT WITH STOP FLAG
 5614 * THEN WRITE FLAG IS RESET IN .CRACF.
 5615 *
 5616 *

					007160	5617	ACFCC	NULL		
007160	006013	4714	07	000	5618	LDP		P1,SD,IOG,DL		
007161	001761	4714	07	000	5619	LDP		P1,.CTYP,DL	GET TYPE 0 DESC	
007162	700361	2351	00	000	5620	LDA		.CRACF,,P.CR		
007163	100023	2221	00	000	5621	LDX2		.WEACF,,P.IOQ	X2 HAS I/O ENTRY OFFSET FOR ACCT	
007164	100006	2361	12	000	5622	LDQ		.WEICM,2,P.IOQ	GET CMD	
007165	040001	1160	07	000	5623	CMPQ		=0400C1,DL		
007166	007220	6000	00	010	5624	TZE		CLOSTC	REQS TO GET C.C TO EXCHANGE	
007167	700361	0541	00	000	5625	AOS		.CRACF,,P.CR		
007170	000014	3150	03	000	5626	CANA		=0000C14,DU		
007171	007205	6010	00	010	5627	TNZ		CLOST		
007172	700510	2351	00	000	5628	LDA		.CRSKT+.WEEND,,P.CR	GET STATUS	
007173	014061	3150	00	010	5629	CANA		=0577C00C		
007174	007264	6010	00	010	5630	TNZ		CCSNG	ABORT STATUS	
007175	370000	3750	03	000	5631	ANA		=0370C000,DU		
007176	007232	6000	00	010	5632	TZE		CCSOK	READY STATUS	
007177	700361	2361	00	000	5633	LDQ		.CRACF,,P.CR		
007200	040000	3160	03	000	5634	CANQ		=040000,DU		
007201	007264	6000	00	010	5635	TZE		CCSNG	DISC ERROR	
007202	700510	2351	00	000	5636	LDA		.CRSKT+.WEEND,,P.CR		
007203	434000	1150	03	000	5637	CMPA		=0434000,DU		
007204	007264	6010	00	010	5638	TNZ		CCSNG	NOT EOT ,TI	
					5639 *					
					007205	5640	CLOST	NULL		
007205	700361	2351	00	000	5641	LDA		.CRACF,,P.CR		
007206	030000	3150	03	000	5642	CANA		=0300C0,DU	IS IT TAPE OR DISC ACCT	
007207	007227	6000	00	010	5643	TZE		CLOSTT	TAPE ACCT,CALL ACTTO SWITCH TAPES	
007210	100000	2350	03	000	5644	LDA		=0100C000,DU		
007211	700361	2551	00	000	5645	ORSA		.CRACF,,P.CR		
007212	700361	6551	00	000	5646	ERSA		.CRACF,,P.CR		
					5647 *					
					007213	5648		.CALL	.MPOPV,1	
								INHIB	SAVE,CN	
007213	000003	6306	04	7216				EPPRO	*+3,\$	
007214	700002	7103	00	000				TRA	.CRCAL,,P.CR	
007215	000467	000001	000					ZERO	.MPOPV,1	
								INHIB	RESTORE	
007216	100023	2221	00	000	5649	LDX2		.WEACF,,P.IOQ	RELOAD ACCT ENTRY ADDR	

ACTFL COURTESY CALL ROUTINE

007217	007232	7100	00	010	5650 *				
					5651	TRA	CCSOK		REFRESH I/O QUEUE TO PURGE DISC
					5652 *				
		007220			5653	CLOSTC	NULL	CHANGE CMD FOR ACCT	CLOSE
007220	002000	2350	07	000	5654	LDA	.FFDD1,DL		SET 1ST DATA REGION FLAG SET
007221	100001	2551	12	000	5655	ORSA	.WEPRV,2,P.IOQ		
007222	700472	2351	00	000	5656	LDA	.WEICM+.CRSKT,,P.CR		
007223	100006	7551	12	000	5657	STA	.WEICM,2,P.IOQ		RESET 1ST CMD
007224	700475	2351	00	000	5658	LDA	.WEFCM+.CRSKT,,P.CR		
007225	100011	7551	12	000	5659	STA	.WEFCM,2,P.IOQ		RE--SET 2ND CMD
007226	007205	7100	00	010	5660	TRA	CLOST		
					5661 *				
		007227			5662	CLOSTT	NULL		
		007227			5663	.CALL	.MACTS,1		EOT EXCHANGE TAPE
						INHIB	SAVE,ON		
007227	000003	6306	04	7232		EPPRO	*+3,\$		
007230	700002	7103	00	000		TRA	.CRCAL,,P.CR		
007231	000004	000001		000		ZERO	.MACTS,1		
						INHIB	RESTORE		
					5664 *				
					5665 *				

ACTFL COURTESY CALL ROUTINE

```

5667 *
007232 000000 6240 12 000 5668 CCSOK NULL
007233 006130 4724 07 000 5669 EAX4 0,2
5670 LDP P2,SD,CR,DL SET CR DESC AS A PAT SEG
5671 *
007234 006056 4734 07 000 5672 LDP P3,SD,ACB,DL
007235 700373 2211 00 000 5673 LDX1 .CRACF+1C,,P,CR
007236 300000 7411 00 000 5674 STX1 0,,P3 SET DATA ADDR FOR WRITE
007237 700361 2351 00 000 5675 LDA .CRACF,,P,CR
007240 040000 3150 03 000 5676 CANA =0400C0,DU
007241 007257 6010 00 010 5677 TNZ TPSKA TAPE,NO SEEK ADDR IS NEEDED
007242 100000 3150 03 000 5678 CANA =0100000,DU
007243 007333 6010 00 010 5679 TNZ LOGEF GOT LOG
007244 700363 2221 00 000 5680 LDX2 .CRACF+2,,P,CR
007245 700000 7221 12 000 5681 LXL2 0,2,P,CR
007246 003774 3620 03 000 5682 ANX2 .FCHNX,DU X2 HAS LPCX
5683 *
007247 000000 2360 03 000 5684 LDQ 0,DU
007250 000363 6230 00 000 5685 EAX3 .CRACF+2 P2 HAS CR DESC AS A PAT SEG
007251 777777 4110 03 000 5686 LDE -1,DU SET MSKWPT FLAG EL8.
007252 011206 7050 00 010 5687 TSX5 MSCSK GET SEEK ADDRESS EL8.
007253 007323 7100 00 010 5688 TRA SKERR ERR
5689 *
007254 700512 2351 00 000 5690 LDA .CRASA,,P,CR RETRIEVE CURRENT S.A
007255 700512 7561 00 000 5691 STQ .CRASA,,P,CR SAVE NEXT S.A
5692 *
007256 100006 7551 14 000 5693 STSKA NULL
5694 STA .WEICM,4,P,IOQ SET SEEK ADDR
007257 5695 TPSKA NULL
5696 *
007257 014062 2350 00 010 5697 LDA =0377763777777777
007260 700361 3551 00 000 5698 ANSA .CRACF,,P,CR RESET WRITING FLAG
5699 *
007261 5700 ENDC .AENDC END COURTESY CALL EL8.
007261 .CALL .MDISP,5
007261 000003 6306 04 7264 INHIB SAVE,ON
007262 700002 7103 00 000 EPPRO ++3,$
007263 000057 000005 000 TRA .CRCAL,,P,CR
ZERO .MDISP,5
INHIB RESTORE
5701 *
5702 *

```

ACTFL COURTESY CALL ROUTINE

					007264	5704	CCSNG	NULL				
						5705	*		ERROR PROCESSING			
007264	100023	2241	00	000		5706		LDX4	.WEACF,,P.I0Q			
007265	100000	0541	14	000		5707		AOS	.WEST,4,P.I0Q			
007266	700361	2351	00	000		5708		LDA	.CRACF,,P.CR			
007267	040000	3150	03	000		5709		CANA	=0400CO,DU			
007270	007302	6010	00	010		5710		TNZ	TPCFG		TAPE CONFIGURED	
						5711	*					
						007271		5712	.CALL	.MPOPV,2		DISC EXCHANGE ERR
								INHIB	SAVE,ON			
007271	000003	6306	04	7274				EPPRO	*+3,\$			
007272	700002	7103	00	000				TRA	.CRCAL,,P.CR			
007273	000467	000002		000				ZERO	.MPOPV,2			
								INHIB	RESTORE			
						5713	*					
007274	700361	2351	00	000		5714		LDA	.CRACF,,P.CR			
007275	000600	3750	03	000		5715		ANA	=0600,DU			
007276	000600	1150	03	000		5716		CMPA	=0600,DU			
007277	007305	6010	00	010		5717		TNZ	NBACK			
007300	100023	2221	00	000		5718		LDX2	.WEACF,,P.I0Q			
007301	007232	7100	00	010		5719		TRA	CCSOK		PURGE/LOST FLAG SET --LOSE RECORD	
						5720	*					
						5721	*					
						007302		5722	TPCFG	NULL		
								5723	*			
						007302		5724	.CALL	.MACTS,2		EXCHANGE TAPE
								INHIB	SAVE,ON			
007302	000003	6306	04	7305				EPPRO	*+3,\$			
007303	700002	7103	00	000				TRA	.CRCAL,,P.CR			
007304	000004	000002		000				ZERO	.MACTS,2			
								INHIB	RESTORE			
						5725	*					
						007305		5726	NBACK	NULL		
007305	006056	4734	07	000		5727		LDP	P3,SD,ACE,DL		RELOAD ACB SEG DESC	
007306	100023	2241	00	000		5728		LDX4	.WEACF,,P.I0Q		I/O FOR ACCT STILL SET UP	
007307	300000	2211	00	000		5729		LDX1	0,,P3		FETCH DATA ADDR	
007310	700361	7221	00	000		5730		LXL2	.CRACF,,P.CR		BLOCK SER#	
007311	000001	0220	03	000		5731		ADLX2	1,DU			
007312	300000	7421	11	000		5732		STX2	0,1,P3		STORE IN RECORD	
						5733	*					
007313	100004	7211	14	000		5734		LXL1	.WESCT,4,P.I0Q			
007314	007777	3610	03	000		5735		ANX1	=07777,DU		TURN OFF ANY EOT BITS	
007315	100004	4411	14	000		5736		SXL1	.WESCT,4,P.I0Q			
007316	100005	7211	14	000		5737		LXL1	.WEPEP,4,P.I0Q			
007317	001777	3610	03	000		5738		ANX1	=0001777,DU			
007320	100005	4411	14	000		5739		SXL1	.WEPEP,4,P.I0Q		RESET GPR CNTRL FLAG	
						5740	*					
007321	007261	6360	00	010		5741		EAQ	ENDC		SET RETURN	EL8.
007322	004022	7100	00	010		5742		TRA	LINKF		LINK I/O FIRST	EL8.
						5743	*					

ACTFL COURTESY CALL ROUTINE

					007323	5744 SKERR	NULL				
007323	100000	3160	03	000	5745	CANQ	=0100000,DU				
007324	007331	6000	00	010	5746	TZE	RLERR				
007325	100000	2350	03	000	5747	LDA	=0100000,DU	SET LOGICAL EOF FLAG			
007326	700361	2551	00	000	5748	ORSA	.CRACF,,P.CR				
007327	700512	2351	00	000	5749	LDA	.CRASA,,P.CR				
007330	007256	7100	00	010	5750	TRA	STSKA				
					5751 *						
007331	000070	7160	00	010	5752	RLERR XEC	DEBUG				16FW0480
					007332	5753	ZOP	8			16FW0490
					5754 *	TRA	LOGEF				16FW0500
					5755 **		ERROR OTHER THAN LOGICAL EOF				
					5756 *						
					007333	5757	LOGEF NULL				
					007333	5758	.CALL	.MPOPV,1	LOG. EOF EXCHANGE		
						INHIB	SAVE,CN				
007333	000003	6306	04	7336		EPPRO	*+3,\$				
007334	700002	7103	00	000		TRA	.CRCAL,,P.CR				
007335	000467	000001		000		ZERO	.MPOPV,1				
						INHIB	RESTORE				
					5759 *						
007336	100023	2241	00	000	5760	LDX4	.WEACF,,P.IOQ				
007337	007257	7100	00	010	5761	TRA	TPSKA				
					5762 *						
					007340	5763	E13END NULL				

C2 EP15 ASTIO (CALL STIO ROUTINE)

5765 * THIS ROUTINE CALLS STIO AND RETURNS VIA .EXIT.
 5766 * THE .CRQGT HAS BEEN SHUT (.SHUT) BY CALLER AND WILL BE
 5767 * OPENED IN STIC.

5768 *
 5769 * INPUT REGISTERS
 5770 * X2= LOGICAL PRIMARY CHANNEL INDEX
 5771 * X6= KFX
 5772 * X7= CFUNO

007340

007340	006013	4716	07	000	5773	ASTIO	NULL			
					5774		INHIB	ON		
007340	006013	4716	07	000	5775		LDP	P.IOQ,SD,IOQ,DL	ESTABLISH IOQ SEGMENT	IOS04AAM
007341	001761	4716	07	000	5776		LDP	P.IOQ,.CTYP,DL	T=0	IOS04AAM
007342	007347	7032	00	010	5777		TSX3	STIO	ATTEMPT TO START I/O	
007343	006133	4706	07	000	5778		LDP	PO,SD,KL,DL	GET .KL DESCRIPTOR	
007344	000044	2263	17	000	5779		LDX6	.KLPRG,7,PO	GET ACTIVE PROCESS NUMBER	IOS06120
007345	600214	2373	00	000	5780		LDAQ	.STEMP+8,,P.SSA	RESTORE .STEMP+8&9 THRU EXIT	
007346	012374	7102	00	010	5781		TRA	RLXIT	EXIT	EL8.
					5782		INHIB	OFF		

S T A R T I / O --- TRACE AND CHANNEL MODULE SELECT

5784
5785 *STIO ROUTINE TO DETERMINE WHETHER THERE IS AN I/O ENTRY WHICH CAN BE
5786 * STARTED ON A LOGICAL PRIMARY CHANNEL
5787 *
5788 * ROUTINE IS CALLED FROM A LINK ROUTINE, WHICH HAS DETERMINED THAT
5789 * THE NEW ENTRY ISNT GESPECED OR THAT THE SI HAS ALREADY OCCURRED
5790 *
5791 * ROUTINE IS ALSO CALLED FROM THE INTERRUPT HANDLER WHICH HAS
5792 * DETERMINED THAT A CHANNEL (PRIMARY OR SECONDARY) IS FREE OR ANY
5793 * GESPEC CONDITIONS HAVE BEEN SATISFIED
5794 *
5795 * THE STIO ROUTINE WILL CALL A CHANNEL DEPENDENT SELECT ROUTINE TO
5796 * SELECT THE NEXT I/O ENTRY IN THE I/O STREAM TO START. THE SELECT
5797 * ROUTINE IS ALWAYS ENTRY 3 OF A CHANNEL MODULE.
5798 * INPUT TO CHANNEL SELECT ROUTINE IS
5799 *
5800 * X2= LOGICAL PRIMARY CHANNEL INDEX
5801 * X6= KPX IN EXECUTION
5802 * X7= CPUNO
5803 *
5804 *
5805 * THE CHANNEL SELECT ROUTINE IS CALLED VIA A TSXO.
5806 * THE CHANNEL SELECT ROUTINE MUST BE INHIBITED
5807 * SINCE THE .CRQGT GATE IS SHUT.
5808 * IT HAS THE FOLLOWING POSSIBLE EXITS.
5809 *
5810 * TRA C,O USE THE NORMAL SELECT ROUTINE IN STIO TO
5811 * SELECT THE FIRST I/O ENTRY WHICH IS NOT STOPPED, NOT
5812 * GESPECED AND LINKED (STNML). THIS NORMAL ROUTINE
5813 * WILL THEN DETERMINE IF THE ENTRY CAN BE STARTED
5814 * (CHANNEL AND DEVICE ARE NOT BUSY). IF A CHANNEL
5815 * IS FREE BUT THE DEVICE IS BUSY, THE NEXT ELIGIBLE
5816 * ENTRY WILL BE FOUND AND CHECKED.
5817 * WHEN AN ENTRY IS FOUND WHICH CAN BE STARTED, CONTROL
5818 * WILL TRANSFER TO SETST TO INITIATE THE I/O.
5819 * THE CHANNEL SELECT ROUTINE AT EP 3 CONSISTS OF A
5820 * TRA C,O ONLY.
5821 *
5822 * TRA 1,O THE .CRQGT IS SHUT WHEN THE TRANSFER TO
5823 * EP3 IS MADE. THE CHANEL HAS A UNIQUE SELECT ROUTINE
5824 * WHICH WILL DETERMINE WHICH I/O ENTRY TO START.
5825 * THE SELECT ROUTINE WILL ALSO DETERMINE IF THE
5826 * CHANNEL AND DEVICE ARE AVAILABLE AT THE TIME OF THE
5827 * TRA 1,O EXIT TO STIO, THE FOLLOWING REGISTERS
5828 * MUST BE SET
5829 *
5830 * X1= TRUE CHANNEL INDEX
5831 * X2= LOGICAL PRIMARY CHANNEL INDEX
5832 * X4= I/O ENTRY TO BE STARTED
5833 * X7= CPUNO

S T A R T I / O --- TRACE AND CHANNEL MODULE SELECT

5834 *
 5835 * THE .CRQGT MUST STILL BE SHUT AT THE RETURN TO STIO.
 5836 * CONTROL WILL RETURN TO SETST TO INITIATE THE I/O.
 5837 *
 5838 * TRA 2,0 THE .CRQGT IS SHUT WHEN THE TRANSFER IS MADE
 5839 * TO EF3. THE CHANNEL SELECT ROUTINE IN THE CHANNEL
 5840 * MODULE HAS DETERMINED THAT NO I/O ENTRY IS ELIGIBLE
 5841 * TO BE STARTED (AS IN THE CASE OF ALL CHANNELS BEING
 5842 * BUSY). THE .CRQGT GATE MUST STILL BE SHUT WHEN THE
 5843 * EXIT IS MADE. THE ONLY REGISTER WHICH MUST BE
 5844 * PRESERVED IS X7= CPUNO
 5845 *
 5846 * TRA 3,0 THE .CRQGT IS SHUT WHEN THE TRANSFER IS MADE TO
 5847 * EP3 THE DS20 CHANNEL SELECT ROUTINE DETERMINES THAT A
 5848 * SEEK ONLY IS TO BE STARTED. UPON RETURN , SM3 AND 4 ARE
 5849 * STORED AND THE QR CONTAINS THE PMX IMAGE. THE .CRQGT IS
 5850 * STILL SHUT.
 5851 *
 5852 * TRA 4,0 THE .CRQGT IS SHUT WHEN THE SELECT ROUTINE IS
 5853 * CALLED. THE DS20 CHANNEL SELECT ROUTINE DETERMINES THAT
 5854 * THE ASSOCIATED READ OR WRITE FOR A COMPLETED SEEK IS
 5855 * TO BE STARTED. UPON RETURN, SMX3 AND 4 ARE STORED AND
 5856 * THE QR CONTAINS THE PMX IMAGE. THE .CRQGT GATE IS STILL
 5857 * SHUT.
 5858 *
 5859 * TRA 5,0 THE CHANNEL MODULE CAN HANDLE MULTIRECORD
 5860 * COMMANDS.
 5861 *
 5862 * TRA 6,0 SEND READ CONTROLLER COMMANDS FOR MASS STORE
 5863 *
 5864 * TRA 7,0 DO CONNECT ACCOUNTING , CONNECT WAS SENT.
 5865 *
 5866 *
 5867 * THE SELECTED ENTRY, (IF ONE IS FOUND), WILL REMAIN LINKED BUT THE
 5868 * QUEUE STATUS AND IOS STATUS WILL BE CHANGED TO IN TRANSMISSION.
 5869 *
 5870 * THE I/O ENTRY WILL BE USED TO FILL THE MAILBOXES AND THE CONNECT
 5871 * WILL BE ISSUED.
 5872 *
 5873 *
 5874 * RETURN WILL BE MADE TO THE CALLING ROUTINE.
 5875 *
 5876 *
 5877 * INPUT REGISTERS
 5878 * X2= LOGICAL PRIM. CH. INDEX
 5879 * X3= TRANSFER REGISTER
 5880 * X4= I/O ENTRY RELATIVE
 5881 * X6= KPX CF I/O ENTRY
 5882 * X7= CPUNO
 5883 * .CRQGT SHUT WHEN CALLED

S T A R T I / O --- TRACE AND CHANNEL MODULE SELECT

5884 *
 5885 * ENTRY TO THE STIC ROUTINE IS GENERALLY MADE WITH A TSX3
 5886 * TO STIO. HOWEVER, THERE ARE OTHER SELDOM USED ENTRANCES
 5887 * TO THIS ROUTINE AS FOLLOWS.....
 5888 *
 5889 * -- TYFER -- STSPC -- STGPC -- RSET -- RSET1 --
 5890 *
 5891 * THIS ROUTINE IS SELF CONTAINED WITH THE EXCEPTION OF
 5892 * THESE LISTED ENTRANCES ABOVE.

5895 INHIB ON
 5896 (THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)

					5897	STIO	NULL		
007347	010654	7432	17	010	5898		STX3	STIO3,7	SAVE RETURN ADDRESS
007350	701400	7213	12	000	5899		LXL1	.CRCT1,2,P.CR	
007351	003774	3612	03	000	5900		ANX1	.FCHNX,DU	PRIMARY TRUE CHANNEL INDEX
007352	006131	4706	07	000	5901		LDP	PO,SD,DDD,DL	
007353	701403	2353	12	000	5902		LDA	.CRCT4,2,P.CR	
007354	000000	4707	01	000	5903		LDP	PO,,AU,PC	GET CHANNEL MODULE SEG. ID
007355	000000	5076	00	000	5904		AWDX	0,,PO	
007356	000002	6356	04	7360	5905		EPPR	P.IOS,++2,\$	RETURN REGISTER
007357	000003	7103	00	000	5906		TRA	3,,PO	TRANSFER TO CHANNEL MODULE EP3

EL8.

EXIT POINTS

007360	007370	7102	00	010	5911	TRA	STNML	NORMAL SELECT ROUTINE	(0,0)
007361	007732	7102	00	010	5912	TRA	SETS1	START SELECTED I/O ENTRY	(1,0)
007362	010523	7102	00	010	5913	TRA	SEXIT	NO ACTION	(2,0)
007363	007701	7102	00	010	5914	TRA	SEEKM	ISSUE SEEK FOR X4 ENTRY	(3,0)
007364	007703	7102	00	010	5915	TRA	WRRDM	ISSUE READ OR WRITE FOR DS20	(4,0)
007365	007370	7102	00	010	5916	TRA	STNML	NORMAL (SLMRS FOR M.R.SIM)	(5,0)
007366	007675	7102	00	010	5917	TRA	STRCR	RCR FOR SEEK COMPLETE ON DS180	(6,0)
007367	010502	7102	00	010	5918	TRA	CONACT	DO ACCOUNTING TRACE AFTER CIOC	(7,0)

5919
 5920 UPON EXIT FROM THE CHANNEL MODULE SELECT ROUTINE THE
 5921 CHANNEL MODULE WILL NOT HAVE MODIFIED THE DESCRIPTOR
 5922 REGISTERS BUT WILL PUT THE INDEX REGISTERS IN THE
 5923 FOLLOWING STATE IF AN ENTRY WAS SELECTED

- 5924
- 5925 X1 = TRUE CHANNEL INDEX
- 5926 X2 = LOGICAL PRIMARY CHANNEL INDEX
- 5927 X4 = I/O ENTRY ADDRESS
- 5928 X6 = KPX OF I/O ENTRY SELECTED
- 5929 X7 = CPUNO
- 5930
- 5931
- 5932

S T A R T I / O --- NORMAL SELECT ROUTINE

5934

5935 *

5936 *

5937 *

5938 *

5939 *

5940 *

5941 *

5942 *

5943 *

5944 *

007370

007370 007455 7422 00 010
 007371 701401 2243 12 000
 007372 010523 6002 00 010
 007373 007416 7442 00 010

5945 STNML NULL

5946 STX2

5947 LDX4

5948 TZE

5949 STX4

007374

007374 701200 2233 11 000
 007375 007410 6002 00 010
 007376 701200 7213 11 000
 007377 010000 3012 03 000
 007400 010523 6002 00 010
 007401 003774 3612 03 000
 007402 701203 7223 11 000
 007403 003774 3622 03 000
 007404 701200 7233 11 000
 007405 040000 3032 03 000
 007406 010523 6012 00 010
 007407 007374 7102 00 010

5950 *

5951 CKCHL NULL

5952 LDX3

5953 TZE

5954 LXL1

5955 CANX1

5956 TZE

5957 ANX1

5958 LXL2

5959 ANX2

5960 LXL3

5961 CANX3

5962 TNZ

5963 TRA

007410

007410 007663 7412 00 010
 007411 007570 7412 00 010
 007412 007664 4502 00 010
 007413 007420 7102 00 010

5964 *

5965 NTBSY NULL

5966 STX1

5967 STX1

5968 STZ

5969 TRA

007414

007414 007664 2242 00 010
 007415 007432 6012 00 010
 007416 000000 2242 03 000
 007417 010523 6002 00 010
 007420 000000 2352 03 000

5970 *

5971 SELC NULL

5972 LDX4

5973 TNZ

5974 ENTRY LDX4

5975 TZE

5976 SFND1 LDA

5977 *

5978 LCQ

5979 SFIND RPL

5980 CMK

5981 TTF

5982 LDX0

5983 TNZ

CONTENTS OF REGISTERS AT ENTRY TO THIS SELECT ROUTINE

X1 = PRIMARY TRUE CHANNEL INDEX
 X2 = PRIMARY LOGICAL CHANNEL INDEX
 X6 = KPX OR ZERO IF INTERRUPT HANDLER
 X7 = CPUNO

THE .CRQGT GATE IS CLOSED

NORMAL SELECT ROUTINE

PRLCX SAVE PRIMARY LOGICAL CHANNEL INDEX
 .CRCT2,2,P.CR I/O QUEUE POINTER
 SEXIT THERE IS NO I/O TO START
 ENTRY I/O ENTRY CANDIDATE

CHECK THIS CHANNEL

.CRI01,1,P.CR IS THIS CHANNEL BUSY
 NTBSY CHANNEL IS NOT BUSY
 .CRI01,1,P.CR
 .FXBAR,DU IS THIS CHANNEL X-BARRED
 SEXIT NO MORE CHANNELS TO CHECK
 .FCHNX,DU TCX OF NEXT X-BAR
 .CRI04,1,P.CR
 .FCHNX,DU LOGICAL CHAN. INDEX FOR THIS TRUE CHA
 .CRI01,1,P.CR
 .FPRCH,DU IS THIS PRIMARY CHAN. ON X-BAR
 SEXIT YES, NO MORE CHANNELS TO CHECK
 CKCHL GO CHECK THIS CHANNEL

NON-BUSY CHAN. TO USE AS CANDIDATE

BESTX
 STRT SAVE CHANNEL STARTING POINT
 BYPAS ZERO BYPASSED I/O ENTRY FLAG
 SFND1

SELECT AN I/O ENTRY

BYPAS SEE IF AN I/O ENTRY WAS BYPASSED
 SELC2 USE THIS I/O ENTRY NEXT
 **,DU STARTING POINT FOR THIS SEARCH
 SEXIT NO ENTRIES LEFT IN THE QUEUE
 0,DU LOCKING FOR ZEROES THAT INDICATE --
 NOT STOPPED -- NOT GESPECED -- NOT IN TRANSMISSION
 =0430001,DL MASK =0777777347777
 0,TZE FIND AN I/O ENTRY
 .WEST,4,P.IOQ
 SELC1 ELIGIBLE ENTRY FOUND
 .WEST,4,P.IOQ
 SFIND TALLY EXHAUSTED

S T A R T I / O --- NORMAL SELECT ROUTINE

007427	010523	7102	00	010	5984	TRA	SEXIT	NO ENTRY TO START	
					5985 *				
007430	100000	2233	14	000	5986	SELC1	LDX3	.WEST,4,P.I0Q	POINTER TO NEXT ENTRY IN QUEUE
007431	007416	7432	00	010	5987		STX3	ENTRY	SAVE IT
					5988 *				
					5989	SELC2	NULL		
007432	100003	7263	14	000	5990		LXL6	.WEPID,4,P.I0Q	
					5991 *				
					5992 *			FIND ANY PRIORITY SELECTS (TAPE)	
007433	007664	0342	00	010	5993	LDAC	BYPAS	TEST PRIORITY BYPASS	
007434	007475	6012	00	010	5994	TNZ	ELGB1	USE X4 ENTRY	
007435	701400	7233	12	000	5995	LXL3	.CRCT1,2,P.CR		
007436	000001	3032	03	000	5996	CANX3	.FSTCH,DU	IS CHANNEL STOPPED	
007437	007475	6012	00	010	5997	TNZ	ELGB1	YES, DONT USE PRIORITY SELECT	
007440	100004	2233	14	000	5998	LDX3	.WESCT,4,P.I0Q	TEST, I/O REQUEST TO MT-DEVICE	
007441	017774	3632	03	000	5999	ANX3	.FSCT1,DU		
007442	700000	2353	13	000	6000	LDA	0,3,P.CR		
007443	770000	3752	03	000	6001	ANA	=0770000,DU	GET DEVICE TYPE CODE	
007444	200000	1152	03	000	6002	CMPA	.DCR2C*4C96,DU	IS DEVICE TAPE	I0S01005
007445	007475	6032	00	010	6003	TRC	ELGB1	NO	I0S01010
007446	100000	1152	03	000	6004	CMPA	.DMTAP*4096,DU	MAYBE	I0S01015
007447	007475	6022	00	010	6005	TNC	ELGB1	NO	I0S01020
					6006				
007450	006145	4706	07	000	6007	LDP	PO,SD,SSA,DL	REQUEST FROM INTERRUPT HANDLER	
007451	013053	7002	00	010	6008	TSX0	ADESC	GET ABSOLUTE P.SSA	
007452	000151	2353	00	000	6009	LDA	.SPROI,,PO	ANY PRIORITY I/O	I0S00980
007453	007475	6002	00	010	6010	TZE	ELGB1	NO PRIORITY REQUEST	
007454	000000	6232	01	000	6011	EAX3	0,AU	PRIORITY REQUEST CHANNEL	
007455	000000	1032	03	000	6012	PRLCX	CMPX3	**DU	COMPARE REQUESTED CHAN. TO PRIM. LCX
007456	007475	6012	00	010	6013	TNZ	ELGB1	REQUEST IS ON ANOTHER CHANNEL	
007457	437701	3362	07	000	6014	LCQ	=0437701,DL	MASK =077777340077	
007460	007700	3752	07	000	6015	ANA	.FLDN,DL	ZERO ALL FIELDS BUT DEVICE #	
007461	100000	2113	14	000	6016	CMK	.WEST,4,P.I0Q		
007462	007475	6002	00	010	6017	TZE	ELGB1	PRIORITY DEVICE IS ALREADY IN X4	
007463	007416	2232	00	010	6018	LDX3	ENTRY	SET UP A SEARCH OF ALL I/O ENTRIES	
					6019 *			FOLLOWING X4 LOOKING FOR PRIORITY DEV	
					6020 *			NOT STOPPED -- NOT GESPECED -- NOT IN TRANSMISSION	
007464	007475	6002	00	010	6021	TZE	ELGB1	NO MORE ENTRIES	
007465	000300	5002	00	000	6022	LOOKA	RPL	PRIORITY SEARCH	
007466	100000	2113	13	000	6023	CMK	.WEST,3,P.I0Q		
007467	007473	6072	00	010	6024	TTF	PRIOR	FOUND PRIORITY DEVICE	
007470	100000	2203	13	000	6025	LDX0	.WEST,3,P.I0Q		
007471	007465	6012	00	010	6026	TNZ	LOOKA	TALLY RAN OUT -- KEEP LOOKING	
007472	007475	7102	00	010	6027	TRA	ELGB1	NO PRIORITY DEVICE IN QUEUE	
					6028 *				
					6029	PRIOR	NULL	SWITCH TO PRIORITY I/O ENTRY	
007473	007664	7442	00	010	6030	STX4	BYPAS	SET FLAG FOR BYPASSED ENTRY	
007474	000000	6242	13	000	6031	EAX4	0,3	USE PRIORITY ENTRY	
					6032 *				
					6033	ELGB1	NULL	CHECK ELIGIBLE ENTRY FOR STOPPED OR BUSY	

S T A R T I / O --- NORMAL SELECT ROUTINE

007475	100004	2233	14	000	6034	LDX3	.WESCT,4,P.I0Q	POINTER TO DEVICE SCT	
007476	017774	3632	03	000	6035	ANX3	.FSCT1,DU		
007477	700000	7233	13	000	6036	LXL3	0,3,P.CR	DEVICE SCT	
007500	000001	3032	03	000	6037	CANX3	.FSTCH,DL	IS DEVICE STOPPED	EL8.
007501	007507	6002	00	010	6038	TZE	ELGB2	NO	EL8.
007502	010000	3032	03	000	6039	CANX3	.FMLTC,DU	MAYBE, IS IT LEGIT	EL8.
007503	007507	6002	00	010	6040	TZE	ELGB2	NO	
007504	100005	7233	14	000	6041	LXL3	.WEPEP,4,P.I0Q		
007505	002000	3032	03	000	6042	CANX3	.FSGPR,DU	IS THIS A SPECIAL GEPR I/O ENTRY	
007506	007414	6002	00	010	6043	TZE	SELC	DEVICE STOPPED W/O SPECIAL GEPR	
					6044	*			
					6045	ELGB2	NULL	FIND IF DEVICE ALREADY BUSY	
007507	100000	2353	14	000	6046	LDA	.WEST,4,P.I0Q	GET LOGICAL DEVICE INDEX	
007510	010000	2752	07	000	6047	ORA	.FTRAN,DL	FORCE IN TRANSMISSION BIT	
007511	017701	3362	07	000	6048	LCQ	=017701,DL	MASK =077777760077	
007512	007455	2232	00	010	6049	LDX3	PRLCX	PRIMARY LOGICAL CHAN. INDEX	
007513	701401	2233	13	000	6050	LDX3	.CRCT2,3,P.CR	POINTER TO I/O QUEUE	
007514	000300	5002	00	000	6051	LFIND	RPL	0,TZE	DEVICE BUSY SEARCH
007515	100000	2113	13	000	6052	CMK	.WEST,3,P.I0Q		
007516	007414	6072	00	010	6053	TTF	SELC	DEVICE IS BUSY -- GET ANOTHER ENTRY	
007517	100000	2203	13	000	6054	LDX0	.WEST,3,P.I0Q		
007520	007514	6012	00	010	6055	TNZ	LFIND	TALLY EXHAUSTED	
					6056	*			
					6057	*			
					6058	*		X4 NOW POINTS AT AN I/O ENTRY NOT STOPPED, GESPECED,	
					6059	*		OR IN TRANSMISSION USING A DEVICE WHICH IS NOT	
					6060	*		STOPPED OR ALREADY BUSY.	
					6061	*			
					6062	*		X1 = TRUE CHAN. INDEX OF CHANNEL CANDIDATE	
					6063	*		X2 = LOGICAL CHAN. INDEX OF CHANNEL CANDIDATE	
					6064	*		X4 = I/O ENTRY ADDRESS	
					6065	*		X6 = KFX FROM I/O ENTRY	
					6066	*		X7 = CPUNO	
					6067	*			
					6068	*		.CRQGT GATE IS STILL CLOSED	
					6069	*			
					6070			MATCH THE I/O ENTRY WITH THE CHANNEL	
007521	000002	2352	07	000	6070	LDA	.FPRSL,DL		
007522	100004	3153	14	000	6071	CANA	.WESCT,4,P.I0Q	IS I/O FOR PRESELECTED CHANNEL	
007523	007622	6012	00	010	6072	TNZ	PRSEL	YES, GO TO PRESELECTED CODE	
007524	000001	2352	03	000	6073	LDA	1,DU		
007525	100011	3153	14	000	6074	CANA	.WEFCM,4,P.I0Q	DID THIS ENTRY STOP THE CHANNEL	
007526	007552	6002	00	010	6075	TZE	THERE	NO	
007527	100011	2203	14	000	6076	LDX0	.WEFCM,4,P.I0Q	FAILING CHANNEL TCX	
007530	003774	3602	03	000	6077	ANX0	.FCHNX,DU		
007531	701203	7203	10	000	6078	LXLO	.CRIO4,0,P.CR		
007532	003774	3602	03	000	6079	HERE	ANX0	LOGICAL CHANNEL INDEX	
007533	000000	6232	10	000	6080	EAX3	0,0		
007534	040000	2352	07	000	6081	LDA	.FSNDC,DL	IS THIS THE LOGICAL PRIMARY	
007535	701400	3153	10	000	6082	CANA	.CRCT1,0,P.CR	CHANNEL INDEX	
007536	000003	6002	04	000	6083	TZE	3,IC	YES	

S T A R T I / O --- NORMAL SELECT ROUTINE

007537	701400	7203	10	000	6084	LXL0	.CRCT1,0,P.CR	NO, GET IT	
007540	007532	7102	00	010	6085	TRA	HERE		
					6086 *				
007541	007455	1002	00	010	6087	CMPX0	PRLCX	ARE WE ON THE SAME SUBSYSTEM	
007542	007622	6002	00	010	6088	TZE	PRSEL	YES	
007543	003776	3202	03	000	6089	LCX0	.FCHNX+2,DU	IGNORE PRESELECT INDEX	
007544	100011	3403	14	000	6090	ANSX0	.WEFCM,4,P.IOQ	AND FLAG	
007545	000002	2352	07	000	6091	LDA	.FTDRS,DL		
007546	701400	3153	13	000	6092	CANA	.CRCT1,3,P.CR	IS CHANNEL DEACTIVATED	
007547	007552	6012	00	010	6093	TNZ	THERE	YES	
007550	000002	3352	07	000	6094	LCA	.FSTCH+1,DL		
007551	701400	3553	13	000	6095	ANSA	.CRCT1,3,P.CR	RESET THE STOP BIT	
					6096 *				
					007552	6097	THERE	NULL	
007552	000001	2352	07	000	6098	LDA	.FSTCH,DL		
007553	701400	3153	12	000	6099	CANA	.CRCT1,2,P.CR	IS CHANNEL STOPPED	
007554	007711	6002	00	010	6100	TZE	SETST	NO, START THIS I/O ON THIS CHANNEL	
007555	000002	2352	07	000	6101	LDA	.FTDRS,DL		
007556	701400	3153	12	000	6102	CANA	.CRCT1,2,P.CR	IS CHANNEL RESERVED FOR T&D	
007557	000002	6002	04	000	6103	TZE	2,IC	NO	
007560	007663	4502	00	010	6104	STZ	BESTX	YES	
007561	010000	2352	07	000	6105	LDA	.FXBAR,DL		
007562	701200	3153	11	000	6106	CANA	.CRIO1,1,P.CR	DOES CHANNEL HAVE AN X-BAR	
007563	007606	6002	00	010	6107	TZE	MACH1	NO	
					6108 *				
					007564	6109	NXBAR	NULL	MOVE TO NEXT CHANNEL ON X-BAR
007564	701200	7213	11	000	6110	LXL1	.CRIO1,1,P.CR		
007565	003774	3612	03	000	6111	ANX1	.FCHNX,DU	TRUE CHAN. INDEX OF NEXT X-BAR	
007566	701203	7223	11	000	6112	LXL2	.CRIO4,1,P.CR		
007567	003774	3622	03	000	6113	ANX2	.FCHNX,DU	LOGICAL CHAN. INDEX OF THIS TRUE CHAN	
007570	000000	1012	03	000	6114	STRT	CMPX1	** ,DU	ARE WE BACK TO THE INITIAL CHANNEL
007571	007606	6002	00	010	6115	TZE	MACH1	YES	
007572	701200	2203	11	000	6116	LDX0	.CRIO1,1,P.CR	IS CHANNEL BUSY	
007573	007614	6012	00	010	6117	TNZ	CHBSY	YES	
007574	000001	2352	07	000	6118	LDA	.FSTCH,DL		
007575	701400	3153	12	000	6119	CANA	.CRCT1,2,P.CR	IS CHANNEL STOPPED	
007576	007711	6002	00	010	6120	TZE	SETST	NO, START THIS I/O	
007577	000002	2352	07	000	6121	LDA	.FTDRS,DL		
007600	701400	3153	12	000	6122	CANA	.CRCT1,2,P.CR	IS CHANNEL RESERVED FOR T&D	
007601	007564	6012	00	010	6123	TNZ	NXBAR	YES, MOVE TO NEXT CHANNEL	
007602	007663	2202	00	010	6124	LDX0	BESTX		
007603	007564	6042	00	010	6125	TMI	NXBAR	BESTX NEGATIVE, MOVE TO NEXT CHAN.	
007604	007663	7412	00	010	6126	STX1	BESTX	SAVE THIS TCX	
007605	007564	7102	00	010	6127	TRA	NXBAR	TRY NEXT CHANNEL	
					6128 *				
					007606	6129	MACH1	NULL	
007606	007663	2212	00	010	6130	LDX1	BESTX		
007607	010523	6046	00	010	6131	TMOZ	SEXIT	NOTHING TO START	
007610	006000	2352	07	000	6132	LDA	.FREIS+,FSGPR,DL		
007611	100005	3153	14	000	6133	CANA	.WEPEP,4,P.IOQ	SPECIAL GEPR OR GEPR REISSUE	

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S T A R T I / O --- NORMAL SELECT ROUTINE

007612	007414	6002	00	010	6134	TZE	SELC	NO, GET A NEW I/O ENTRY
007613	007711	7102	00	010	6135	TRA	SETST	PERMIT THIS I/O THROUGH THIS STOPPED CHANNEL
					6136	*		
					6137	*		
		007614			6138	CHBSY	NULL	
007614	000001	2352	07	000	6139	LDA	.FSTCH,DL	
007615	701400	3153	12	000	6140	CANA	.CRCT1,2,P.CR	IS CHANNEL STOPPED
007616	007564	6012	00	010	6141	TNZ	NXBAR	YES, GET ANOTHER CHANNEL
007617	777777	2202	03	000	6142	LDX0	-1,DU	
007620	007663	7402	00	010	6143	STX0	BESTX	SET BESTX TO -1
007621	007564	7102	00	010	6144	TRA	NXBAR	TRY ANOTHER CHANNEL
					6145	*		
		007622			6146	PRSEL	NULL	PRE-SELECTED CHANNEL LOGIC
					6147			
007622	100011	2203	14	000	6148	LDX0	.WEFCM,4,P.IOQ	
007623	003774	3602	03	000	6149	ANX0	.FCHNX,DU	TCX OF PRESELECTED CHAN. FROM I/O ENT
007624	701200	2233	10	000	6150	LDX3	.CRIO1,0,P.CR	IS PRESELECTED CHANNEL BUSY
007625	007414	6012	00	010	6151	TNZ	SELC	YES, FIND ANOTHER I/O ENTRY
007626	701203	7233	10	000	6152	LXL3	.CRIO4,0,P.CR	
007627	003774	3632	03	000	6153	ANX3	.FCHNX,DU	LOGICAL CHAN. INDEX OF PRESELECT CHAN
007630	000001	2352	07	000	6154	LDA	.FSTCH,DL	
007631	701400	3153	13	000	6155	CANA	.CRCT1,3,P.CR	IS PRESELECTED CHANNEL STOPPED
007632	007660	6002	00	010	6156	TZE	FIRE	NO, START THIS I/O ON PRESELECTED CHA
007633	200000	2352	03	000	6157	LDA	.FBT1,DU	
007634	100004	3153	14	000	6158	CANA	.WESCT,4,P.IOQ	IS THIS A T&D I/O ENTRY
007635	007660	6012	00	010	6159	TNZ	FIRE	YES, START THIS I/C ON PRESELECTED CH
007636	000002	2352	07	000	6160	LDA	.FTDRS,DL	NO
007637	701400	3153	13	000	6161	CANA	.CRCT1,3,P.CR	IS PRESELECTED CHAN. RESERVED FOR T&D
007640	007414	6012	00	010	6162	TNZ	SELC	YES, TRY ANOTHER I/O ENTRY
					6163	*		
		007641			6164	PRSL1	NULL	
007641	000001	2352	03	000	6165	LDA	1,DU	
007642	100011	3153	14	000	6166	CANA	.WEFCM,4,P.IOQ	DID THIS ENTRY STOP THE CHANNEL
007643	007650	6012	00	010	6167	TNZ	PRSL2	YES
007644	006000	2352	07	000	6168	LDA	.FREIS+.FSGPR,DL	
007645	100005	3153	14	000	6169	CANA	.WEPEP,4,P.IOQ	SPECIAL GEPR OR GEPR REISSUE
007646	007414	6002	00	010	6170	TZE	SELC	NO, FIND ANOTHER I/O ENTRY
007647	007660	7102	00	010	6171	TRA	FIRE	YES, START THIS I/C ON PRESELECTED CH
					6172	*		
		007650			6173	PRSL2	NULL	
007650	100011	6553	14	000	6174	ERSA	.WEFCM,4,P.IOQ	RESET ENTRY STOPPED CHAN FLAG
007651	000002	3352	07	000	6175	LCA	2,DL	MASK =077777777776
007652	701400	3553	13	000	6176	ANSA	.CRCT1,3,P.CR	RESET PRESELECTED CHAN. STOP BIT
007653	000002	2352	07	000	6177	LDA	.FPRSL,DL	
007654	100004	3153	14	000	6178	CANA	.WESCT,4,P.IOQ	LOOK AT PRESELECTED CHAN FLAG
007655	007660	6012	00	010	6179	TNZ	FIRE	CHANNEL IS PRESELECTED, FIRE CONNECT
007656	014063	2352	00	010	6180	LDA	=0774000777777	
007657	100011	3553	14	000	6181	ANSA	.WEFCM,4,P.IOQ	CLEAR PRESELECTED CHAN INDEX
					6182	*		
		007660			6183	FIRE	NULL	FIRE OFF THIS I/O ON PRE-SELECTED CHANNEL

S T A R T I / O --- NORMAL SELECT ROUTINE

007660	000000	6212	10	000	6184	EAX1	0,0	TRUE CHAN INDEX OF PRESELECTED CHAN
007661	000000	6222	13	000	6185	EAX2	0,3	LOGICAL CHAN INDEX FOR PRESELECTED CH
007662	007711	7102	00	010	6186	TRA	SETST	START THIS I/O
					6187	*		
007663	000000000000			000	6188	BESTX	OCT	BEST CHANNEL FOR STIO SELECT
007664	000000000000			000	6189	BYPAS	OCT	SAVE A BYPASSED I/O ENTRY
					6190			

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

					6192				
					6193		(THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)		
				007665	6194	TYPBR	NULL	ENTRY TO REISSUE CONSOLE READ DUE TO OPERATOR ERROR	
007665	010654	7432	17	010	6195	STX3	STI03,7	SAVE RETURN ADDRESS	
007666	001000	2352	07	000	6196	LDA	.FFDD2,DL	SET FALG, PRESENT SECOND DATA	
007667	100001	2553	14	000	6197	ORSA	.WEPRV,4,P.I0Q		
007670	100003	7263	14	000	6198	LXL6	.WEPID,4,P.I0Q		
007671	000002	2202	03	000	6199	LDX0	2,DU	SWITCH INDICATING ISSUE SECOND PART OF DUAL COMMAND	
					6200	*			
007672	000002	2222	03	000	6201	LDX2	2,DU	SWITCH INDICATING Q-REG HAS COMPLETE	
007673	007751	7102	00	010	6202	TRA	FLMBX	FILL MAILBOXES AND ISSUE CONNECT	
					6203				
					6204				
					6205				
					6206		(THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)		
				007674	6207	STSPC	NULL	START SPECIAL COMMAND - ENTRY TO START I/O ROUTINE	
					6208	*			
					6209	*		THIS ROUTINE WILL START A SPECIAL COMMAND TO A CHANNEL OR DEVICE WHICH HAS AN ERROR CONDITION WHICH REQUIRES THE OPERATING SYSTEM TO SEND A COMMAND WHICH MUST BE THE NEXT COMMAND TO THAT DEVICE OR CHANNEL BEFORE PROPER OPERATION CAN CONTINUE. THE CHANNEL IS NOT RELEASED BETWEEN THE PREVIOUS COMMAND AND THIS SPECIAL COMMAND.	
					6210	*			
					6211	*			
					6212	*			
					6213	*			
					6214	*			
					6215	*			
					6216	*			
					6217	*		THIS ROUTINE FILLS IOM MAILBOXES AS THE INFORMATION DICTATES FROM A PSUEDO I/O ENTRY CONTAINED IN THE CHANNEL MODULE.	
					6218	*			
					6219	*			
					6220	*			
					6221	*			
					6222	*		REGISTERS WHEN ENTERED ARE AS FOLLOWS	
					6223	*			
					6224	*		INDEX REGISTER # 1 = TRUE CHANNEL INDEX	
					6225	*		# 2 = LOGICAL PRIM CHAN INDEX	
					6226	*		# 3 = ENTRY ADDRESS TO STIO	
					6227	*		# 4 = ADDRESS OF PSUEDO I/O ENTRY	
					6228	*		# 6 = KPX	
					6229	*		# 7 = CPUNO	
					6230	*			
					6231	*			
007674	010654	7432	17	010	6232	STX3	STI03,7	SAVE RETURN ADDRESS	
				007675	6233	STRCR	NULL	SEND R.C.R. FOR SEEK COMPLETE (EXIT #6)	
007675	701200	7443	11	000	6234	STX4	.CRI01,1,P.CR	SET CHANNEL BUSY	IOS00890
007676	000000	2202	03	000	6235	LDX0	0,DU	SET X # 0 FOR NORMAL COMMAND SEQUENCE	
007677	000000	2222	03	000	6236	LDX2	0,DU	SET SWITCH FOR PMB NOT IN Q-REG	
007700	007751	7102	00	010	6237	TRA	FLMBX		
					6238				
					6239				
				007701	6240	SEEKM	NULL	ISSUE FIRST HALF --ONLY-- OF DUAL COMMAND (EXIT #3)	
					6241	*		A-REG CONTAINS PMB--LESS DEV. & CHAN.	

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007701	000003	2202	03	000	6242	LDXO	3,DU	SWITCH INDICATING ISSUE FIRST PART OF DUAL COMMAND -- SINGLE DCW-PRESE
					6243 *			
007702	007704	7102	00	010	6244	TRA	WRRDM+1	
					6245 *			
	007703				6246	WRRDM	NULL	ISSUE SECOND HALF --ONLY-- OF DUAL COMMAND (EXIT A-REG CONTAINS PMB - LESS DEV. & CHAN SWITCH INDICATING ISSUE SECOND HALF OF DUAL COMMAND
					6247 *			
007703	000002	2202	03	000	6248	LDXO	2,DU	
					6249 *			
007704	000044	7332	00	000	6250	LRS	36	MOVE PARTIAL PMB TO Q-REG
007705	000001	2222	03	000	6251	LDX2	1,DU	SWITCH INDICATING Q-REG HAS PARTIAL P
007706	007740	7102	00	010	6252	TRA	SETCB	SET CHAN. BUSY AND ISSUE CONNECT
					6253			
					6254			
					6255			
					6256			
	007707				6257	STGPC	NULL	(THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)
007707	010654	7432	17	010	6258	STX3	STI03,7	START GESPECED ENTRY (INT. HANDLER EXIT #2 OR .LINK)
007710	100003	7263	14	000	6259	LXL6	.WEPID,4,P.I0Q	SAVE RETURN ADDRESS
					6260 *			
	007711				6261	SETST	NULL	ISSUE A SINGLE I/O COMMAND (FROM COMMON SELECT)
					6262 *			
					6263 *			X1 = TRUE CHANNEL INDEX
					6264 *			X2 = LOGICAL PRIMARY CHANNEL INDEX
					6265 *			X4 = I/O ENTRY ADDRESS
					6266 *			X6 = SELECTED I/O KPX (MAY BE DIFFERENT THAN .LINK KPX)
					6267 *			X7 = CPUNO
					6268 *			.CRQGT GATE IS STILL SHUT
					6269 *			
007711	100004	7203	14	000	6270	LXLO	.WESCT,4,P.I0Q	
007712	000010	3002	03	000	6271	CANXO	.FSEEK,DU	IS SEEK ADDRESS IN I/O ENTRY
007713	007732	6012	00	010	6272	TNZ	SETS1	YES, NORMAL CONNECT SEQUENCE
007714	014064	2362	00	010	6273	LDQ	=0007777000077	MASK OUT RCD CNT & PRESL CHAN.
007715	100006	2353	14	000	6274	LDA	.WEICM,4,P.I0Q	DUAL COMMAND -- FIRST COMMAND
007716	100011	2113	14	000	6275	CMK	.WEFCM,4,P.I0Q	DUAL COMMAND -- SECOND COMMAND
007717	007730	6002	00	010	6276	TZE	SETS0	SINGLE PART I/O CMND
007720	770000	3752	07	000	6277	ANA	.FCCMD,DL	CHANNEL COMMAND FIELD -- FIRST COMMAN
007721	400000	1152	07	000	6278	CMPA	=040000,DL	IS THIS A SPECIAL MPC CHAN. COMMAND
007722	007732	6002	00	010	6279	TZE	SETS1	YES, NORMAL CONNECT SEQUENCE
007723	240000	1152	07	000	6280	CMPA	=024000,DL	IS THIS A MULTIPART COMMAND
007724	007732	6002	00	010	6281	TZE	SETS1	YES, NORMAL CONNECT SEQUENCE
007725	000001	2202	03	000	6282	LDXO	1,DU	SWITCH SET TO ISSUE FIRST HALF OF DUA
					6283 *			COMMAND ONLY -- MULTI DCW'S ALLOWE
007726	050003	2352	07	000	6284	LDA	=0050003,DL	STATUS OF SEEK STARTED, IN XMISSION
007727	007734	7102	00	010	6285	TRA	SETS2	
					6286 *			
007730	100006	7203	14	000	6287	SETS0	LXLO	.WEICM,4,P.I0Q
007731	100011	4403	14	000	6288	SXLO	.WEFCM,4,P.I0Q	2ND CMND AND RECD CNT EQUAL
					6289 *			IN I/O ENTRY FOR GEPR REISSUE
					6290	SETS1	NULL	START SELECTED I/O ENTRY (EXIT #1)
007732	000000	2202	03	000	6291	LDXO	0,DU	SWITCH SET FOR NORMAL CONNECT SEQUENC

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007733	010003	2352	07	000	6292	LDA	.FTRAN+3,DL	SET IN-TRANSMISSION STATUS	IOS04AAM
					6293	*			
007734	000100	3362	07	000	6294	SETS2	LCQ =0100,DL	MASK = 777777 777700	
007735	100000	3563	14	000	6295	ANSQ	.WEST,4,P.IOQ	AND OUT I/O ENTRY QUEUE STATUS	
007736	100000	2553	14	000	6296	ORSA	.WEST,4,P.IOQ	OR IN NEW I/O ENTRY STATUS	
007737	000000	2222	03	000	6297	LDX2	0,DU	SWITCH SET FOR PMB NOT IN Q-REG	
					6298	*			
		007740			6299	SETCB	NULL		
007740	701201	4503	11	000	6300	STZ	.CRIO2,1,P.CR	ZERO CONNECT TIME TO STOP LOST INT PR	
007741	701200	7443	11	000	6301	STX4	.CRIO1,1,P.CR	SET CHANNEL BUSY	
007742	006024	4706	07	000	6302	LDP	PO,SD,PID,DL		14FW1520
007743	000000	6352	16	000	6303	EAA	0,6		14FW1530
007744	000002	7352	00	000	6304	ALS	2	KPID INDEX	14FW1540
007745	701003	7527	11	000	6305	STWS	.CRMB4,1,P.CR	SAVE CURRENT WSR 4-7	14FW1550
007746	000001	7727	01	000	6306	LDWS	1,AU,PO	SET WSR 4-7 FOR PROGRAM	14FW1560
007747	600160	0543	00	000	6307	ACS	.SRQCT,,P.SSA	ADD TO IN-TRANSMISSION COUNT	14FW1570
007750	701003	7727	11	000	6308	LDWS	.CRMB4,1,P.CR	RESTORE WSR 4-7	IOS01150
					6309				

007751

6310 *
6311 FLMBX NULL

FILL THE MAILBOXES STARTING HERE.
ALL CONNECTS TO BE ISSUED (EXCEPT AT GIVRL)
WILL ENTER THIS BLOCK OF CODE AT FLMBX AND
WILL NOT EXIT TILL THE CONNECT IS ISSUED.

G-REG = MAY CONTAIN PARTIAL OR FULL PMB
XC = SWITCH

IF XO=0 NORMAL I/O CONNECT SEQUENCE
XO=1 ISSUE FIRST HALF OF DUAL COMMAND
(MULTIPLE DCW'S ALLOWED)
XO=2 ISSUE SECOND HALF OF DUAL COMMAND
XO=3 ISSUE FIRST HALF OF DUAL COMMAND
(SINGLE DCW ONLY -- PRESEEK)

X1 = TRUE CHANNEL INDEX
X2 = SWITCH

IF X2=0 PMB IS NOT IN Q-REG
X2=1 PMB LESS DEV. & CHAN.# IN Q-REG
X2=2 COMPLETE PMB IN Q-REG

X4 = I/O ENTRY ADDRESS
X6 = KPX FROM I/O ENTRY
X7 = CPUNO

007751	701003	7403	11	000	6335	STX0	.CRMB4,1,P.CR	SAVE INDEX 0 -- CONNECT SEQUENCE	
007752	701003	4423	11	000	6336	SXL2	.CRMB4,1,P.CR	SAVE INDEX 2 -- PMB LOCATION	
007753	100011	2353	14	000	6337	LDA	.WEFCM,4,P.IOQ	I/O COMMAND FROM I/O ENTRY	
007754	014065	3752	00	010	6338	ANA	=0770000770076	DEVICE & CHAN COMMAND & RECORD COUNT	
007755	400000	1152	07	000	6339	CMPA	=0400000,DL	IS THIS A CONTROLLER SUSPEND COMMAND	
007756	010014	6012	00	010	6340	TNZ	FLMB1	NO	
					6341	*			

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

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6342 *
6343 PREPARE CHANNELS BEFORE SUSPEND COMMAND
6344 * SET SUSPEND, T&D AND CHANNEL STOP BITS
6345 * .CRQGT HAS ALREADY BEEN CLOSED
6346 *
007757 001073 7052 00 010 6347 TSX5 SPDPSI SUBROUTINE TO MARK CHANNELS
007760 701200 0543 11 000 6348 AOS .CRIO1,1,P.CR CONVERT THIS TO A SUSPEND COMMAND CHA
6349 * FROM A SUSPENDED CHANNEL
6350 * (BITS #34-35 ARE 01 BECOME 02)
007761 007771 7412 00 010 6351 STX1 TCX1 SAVE TRUE CHANNEL INDEX
6352 *
6353 * NOW FIND THE CONTROLLER SCT (DEVICE ZERO) FOR ALL
6354 * CONNECTIONS TO THE SUSPENDED MPC
6355 *
007762 700410 2233 00 000 6356 LDX3 .CRCST,P.CR ABS. ADDR. FIRST CONTROLLER SCT
007763 700410 7223 00 000 6357 LXL2 .CRCST,P.CR # OF CONTROLLER SCT WORDS IN BITS 18-
007764 700000 7203 13 000 6358 SRCH1 LXL0 0,3,P.CR CONTROLLER CONNECTION
007765 000002 3002 03 000 6359 CANX0 2,DU IS THIS AN ALIEN EXTERNALLY SHARED MP
007766 007773 6012 00 010 6360 TNZ BUMP3 YES, IGNORE THIS CONNECTION
007767 003774 3602 03 000 6361 ANX0 .FCHNX,DU TCX FOR THIS CONNECTION
007770 007773 6002 00 010 6362 TZE BUMP3 NO CONNECTION -- IGNORE
007771 000000 1002 03 000 6363 TCX1 CMPX0 **,DU IS THIS THE SUSPEND COMMAND CHANNEL
007772 007777 6002 00 010 6364 TZE FOUND YES, CONTROLLER SCT FOUND
007773 000001 6232 13 000 6365 BUMP3 EAX3 1,3 NO, LOOK AT THE NEXT CONNECTION
007774 000100 1222 03 000 6366 SBLX2 =0100,DU DECREMENT THE COUNT
007775 007764 6052 00 010 6367 TPL SRCH1 MORE CONNECTIONS TO CHECK
007776 6368 ZOP 7,DU CONNECTION NCT FOUND IN CONTROLLER SC
6369 *
007777 6370 FOUND NULL A CONNECTION HAS BEEN FOUND TO A CONTROLLER SCT
007777 777774 3632 03 000 6371 ANX3 =077774,DU ABS. ADDR. WORD ZERO OF CONTROLLER SC
010000 700000 7213 13 000 6372 CNTON LXL1 0,3,P.CR
010001 000002 3012 03 000 6373 CANX1 2,DU IS THIS AN ALIEN EXTERNALLY SHARED MP
010002 010010 6012 00 010 6374 TNZ NXCON YES, IGNORE THIS CONNECTION
010003 003774 3612 03 000 6375 ANX1 .FCHNX,DU TCX OF PSIA CONNECTION TO MPC
010004 010010 6002 00 010 6376 TZE NXCON NO CONNECTION -- IGNORE
010005 007771 1012 00 010 6377 CMPX1 TCX1 IS THIS THE SUSPEND COMMAND CHANNEL
010006 010010 6002 00 010 6378 TZE NXCON YES, PROCESSED -- GET NEXT CONNECTION
010007 001073 7052 00 010 6379 TSX5 SPDPSI SUBROUTINE TO MARK CHANNELS
6380 *
010010 6381 NXCON NULL MOVE TO THE NEXT MPC CONNECTION
010010 000001 6232 13 000 6382 EAX3 1,3
010011 000003 3032 03 000 6383 CANX3 3,DU IS THIS CONTROLLER SCT MODULO 4
010012 010000 6012 00 010 6384 TNZ CNTON NO, PROCESS THIS MPC CONNECTION
6385 *
6386 * ALL SUSPENDED CHANNELS FROM THIS MPC HAVE
6387 * BEEN MARKED AT THIS TIME.
6388 *
010013 007771 2212 00 010 6389 LDX1 TCX1 RESTORE TRUE CHANNEL INDEX
6390 * TRA FLMB1 RETURN TO ISSUE CONNECT FOR SUSPEND
6391 * COMMAND

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S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

6392 *
 6393
 6394
 6395
 6396
 6397 *****

6398 *
 6399 * DESCRIPTOR REGISTERS CONVERSION
 6400 * ODR0 WORK
 6401 * ODR1 = P.IOQ I/O ENTRY SEGMENT DESCRIPTOR (TYPE-0)
 6402 * ODR2 NOT USE
 6403 * ODR3 = P.EMB EXTEND MAILBOX SEGMENT SAME AS SD.RMS
 6404 * ODR4 WORK
 6405 * ODR5 = PA.PSH PUSH SEGMENT DESCRIPTOR (TYPE-3)
 6406 * ODR6 = P.SSA
 6407 * ODR7 = P.CR CR SEGMENT DESCRIPTOR
 6408 *

6409 *****

6410
 6411
 6412
 6413
 000000 6414 EXMB1 SET 0 FIRST IDCW
 000001 6415 EXMB2 SET 1 FIRST DCW OR TDCW TO POINT DCW
 000002 6416 EXMB3 SET 2 SECOND IDCW
 000003 6417 EXMB4 SET 3 TDCW TO POINT SECOND DCW
 000004 6418 EXMB5 SET 4 AUXILIARY PTW SAVE
 000005 6419 EXMB6 SET 5 SEEK DATA
 000003 6420 EMX SET 3 EXMB INDEX REGISTER
 000003 6421 PO.RMS SET P3 REAL MEMORY SEGMENT TO GET TIME
 000003 6422 P.EMB SET P3 EXTEND MAILBOX
 000005 6423 PA.PSH SET P5 TYPE=3 PH.PSH

6424
 010014 6425 FLMB1 NULL

6426
 6427 DESCRIPTOR REGISTERS INITIALIZE
 6428

010014	003430	7562	17	010	6429	STQ	QSAVE,7	SAVE PMB IMAGE	
					6430				
010015	010660	4502	17	010	6431	STZ	DSFLG,7	SET FLAG TO CURRENT WSN	
010016	006133	4706	07	000	6432	LDP	PO,SD,KL,DL		
010017	006204	4756	07	000	6433	LDP	PA.PSH,SD.PSH,DL	GET SKELETON	IOS02400
010020	000044	1063	17	000	6434	CMPX6	.KLPRG,7,PO	TEST KPX	
010021	000005	6002	04	000	6435	TZE	5,IC	OK	IOS02410
010022	010660	5542	17	010	6436	STC1	DSFLG,7	NOT EQUAL, NEED WSN	IOS02415
010023	006204	4706	07	000	6437	LDP	PO,SD,PSH,DL		IOS02420
010024	013053	7002	00	010	6438	TSX0	ADESC	BUILD FOREIGN DESCRIPTOR	IOS02425
010025	001770	4756	07	000	6439	LDP	PA.PSH,.DRO,DL	COPY TO PA.PSH	
					6440				
					6441			BUILD P.EMB DESCRIPTOR	

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010026	006063	4736	07	000	6442	LDP	P.EMB,SD.RMS,DL	COPY SD.RMS TO P.EMB	
					6443				
					6444			DESCRIPTOR REGISTER INITIALIZE END	
					6445				
					6446				
					6447	*			
010027	701002	2203	11	000	6448	LDX0	.CRMB3,1,P.CR	CHANNEL SCW	
010030	000002	6232	10	000	6449	EAX	EMX,2,0	ABS. POINTER TO DCW INSERT LIST EXMB1	
					6450	*			
					6451	*			
					6452	*		BUILD MAILBOX BASE AND BOUND (.CRMB2)	
					6453	*			
010031	701001	4503	11	000	6454	STZ	.CRMB2,1,P.CR	CLEAR LPWX	
					6455				
010032	100001	7203	14	000	6456	LXL0	.WEPRV,4,P.IOQ	GET CONTROL BIT	
010033	701003	2223	11	000	6457	LDX2	.CRMB4,1,P.CR	CHECK CONNECT SEQUENCE	
010034	000002	1022	03	000	6458	CMPX2	2,DU	IF 2DN HALF ONLY COMMAND	
010035	010065	6002	00	010	6459	TZE	SETSA1	YES, GET 2DN DESCRIPTOR	
					6460				
					6461			TEST I/O TYPE TO BUILD IOM BASE	
					6462				
010036	100004	7223	14	000	6463	LXL2	.WESCT,4,P.IOQ	IS STANDARD MASS STORE ACCESS	
010037	000010	3022	03	000	6464	CANX2	.FSEEK,DU	SEEK DATA HOLDING	
010040	010045	6002	00	010	6465	TZE	SETSA4	NON DS REQUEST	29FWC080
010041	000001	6222	00	000	6466	EAX2	CHN1	SET CHANNEL PROGRAM #	
010042	100003	2423	14	000	6467	ORSX2	.WEPID,4,P.IOQ		
010043	100016	2373	14	000	6468	LDAQ	.WEDRI,4,P.IOQ		29FWC100
010044	010070	7102	00	010	6469	TRA	SETSA3		29FWC110
					6470	*			29FW0120
010045	000000	6222	06	000	6471	SETSA4 EAX2	0,QL	SAVE PMB IMAGE	29FW0130
010046	701003	2353	11	000	6472	LDA	.CRMB4,1,P.CR	IS THERE PMB	
010047	000007	3752	07	000	6473	ANA	7,DL	(TEST CHANNEL COMMAND)	
010050	000001	1152	07	000	6474	CMPA	1,DL		
010051	010053	6056	00	010	6475	TPNZ	SETSA5	THERE IS QR. QL=X2	29FWC150
010052	100006	7223	14	000	6476	LXL2	.WEICM,4,P.IOQ	GET CHANNEL COMMAND	
					6477	SETSA5 NULL			
010053	770000	3622	03	000	6478	ANX2	.FCCMD,DU	RETRIVE CHANNEL COMMAND ONLY	
010054	240000	1022	03	000	6479	CMPX2	=0240000,DU	IS DUAL COMMAND	
010055	010065	6002	00	010	6480	TZE	SETSA1	YES, DATA REGION .WEDRF	
010056	400000	1022	03	000	6481	CMPX2	=0400000,DU	IS DUAL COMMAND	
010057	010065	6002	00	010	6482	TZE	SETSA1	YES, DATA REGION .WEDRF	
					6483				
					6484	SETSA2 NULL		DATA REGION .WEDRI	
010060	000001	2352	07	000	6485	LDA	.PNPOP,DL	GET POPM KPX	10S04890
010061	002000	3002	03	000	6486	CANX0	.FFDD1,DU	IS FIRST DATA	
010062	010103	6002	00	010	6487	TZE	NDTXF	NON, NO DATA TRANSFER	
010063	100016	2373	14	000	6488	LDAQ	.WEDRI,4,P.IOQ	GET DESC. IMAGE TO BUILD BASE	
010064	010070	7102	00	010	6489	TRA	SETSA3		
					6490				
					6491	SETSA1 NULL		DATA REGION .WEDRF	

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010065	001000	3002	03	000	6492	CANX0	.FFDD2,DU	IS SECOND DATA	
010066	010103	6002	00	010	6493	TZE	NDTXF	NON, NO DATA TRANSFER	
010067	100020	2373	14	000	6494	LDAQ	.WEDRF,4,P.IOQ	GET DESC. IMAGE TO BUILD IOM BASE	
					6495				
					010070	6496	SETS A3 NULL		
					6497	*			
010070	100024	7573	14	000	6498	STAQ	.WEEND,4,P.IOQ	SAVE DESCRIPTOR IMAGE	
010071	600000	0352	07	000	6499	ADLA	=0600000,DL	ADD BYTE COUNT	
010072	000022	7712	00	000	6500	ARL	18		
010073	701001	7553	11	000	6501	STA	.CRMB2,1,P.CR	SET BOUND	
010074	000000	6222	02	000	6502	EAX2	,QU	SAVE MOD 64K ADDRESS	
010075	000017	7362	00	000	6503	QLS	16-1	MOVE IOM BASE TO UPPER AND MOD2	
010076	077777	3762	03	000	6504	ANQ	=0077777,DU		
010077	701001	2563	11	000	6505	ORSQ	.CRMB2,1,P.CR	SET IOM BASE	
					6506	*			
					6507	*			
					6508	*			
010100	177777	3622	03	000	6509	ANX2	=0177777,DU	IGNORE WSQ#	
010101	100024	2373	14	000	6510	LDAQ	.WEEND,4,P.IOQ	RESTORE DESCRIPTOR IMAGE TO BUILD WS#	
					6511				
010102	013007	7002	00	010	6512	TSX0	GETWSN	GET WORKING SPACE NUMBER FROM DESC.	
					6513			AL=WS#	
010103	006002	4706	07	000	6514	NDTXF LDP	PO,SD,PTD,DL	GET WSN'S PTP	IOS04900
010104	000000	0223	05	000	6515	ADLX2	0,AL,PO	COMPLETE PTP	
010105	000000	6362	12	000	6516	EAQ	,2	BUILD PCW ODD WORD IMAGE	
010106	000011	7722	00	000	6517	QRL	9	PTP MOVE TO BITS 9-26	
010107	000600	2762	07	000	6518	ORQ	=0600,DL	SET PAGED FLAG	
010110	010653	7562	00	010	6519	STQ	CNECT+3	SAVE	
					6520	*			
					6521	*			
					6522	*			
010111	100001	2353	14	000	6523	LDA	.WEPRV,4,P.IOQ		
010112	044000	3152	07	000	6524	CANA	.FFAUX+.FFDCW,DL	AUX-PTW USED (DCW SEGMENT)	
010113	010125	6012	00	010	6525	TNZ	AUXPR1		
010114	100004	2353	14	000	6526	LDA	.WESCT,4,P.IOQ	TEST DS EOF RECOVERY	
010115	000040	3152	07	000	6527	CANA	.FDSSA,DL		
010116	010140	6002	00	010	6528	TZE	NOAUX	NO, AUX-PTW NOT USE	
					6529	*			
010117	100024	0517	14	000	6530	STD	P.IOQ,.WEEND,4,P.IOQ		
010120	000020	6352	14	000	6531	EAA	.WEDRF,4	DCW IN .WEDRF OF I/O ENTRY	
010121	000020	7712	00	000	6532	ARL	18-2		
010122	100025	0553	14	000	6533	ASA	.WEEND+1,4,P.IOQ	ADD DCW OFFSET TO I/O ENTRY SEG. BASE	
010123	006010	4706	07	000	6534	LDP	PO,SD,PT1,DL	GET PAGE TABLE DESC. FOR I/O ENTRY	
010124	010130	7102	00	010	6535	TRA	AUXPR2		
					6536	*			
					010125	6537	AUXPR1 NULL		
010125	500034	6707	00	000	6538	LDD	PO,PH,DCW,PA,PSH	AUX-PTW OF DCW SEGMENT	
010126	100024	0507	14	000	6539	STD	PO,.WEEND,4,P.IOQ	SAVE DESCRIPTOR IMAGE	
010127	500016	6707	00	000	6540	LDD	PO,PH,PTC,PA,PSH	GET PAGE TABLE DESC. FOR USER PROCESS	
					6541	*			

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

					010130	6542	AUXPR2	NULL			
010130	100025	2353	14	000	6543		LDA	.WEEND+1,4,P.IOQ			
010131	000014	7712	00	000	6544		ARL	10+2			
010132	000000	6222	05	000	6545		EAX2	,AL	GET PAGE TABLE OFFSET		
					6546						
010133	013053	7002	00	010	6547		TSXD	ADESC	GET ABSOLITE DESC. OF PTW SEGMENT		
					6548				PO=DESCRIPTOR		
010134	000000	2353	12	000	6549		LDA	0,2,PC	GET PTW OF AUX-PTW OR I/O ENTRY		
010135	300004	7553	13	000	6550		STA	EXMB5,EMX,P.EMB	SAVE IN EXMB5		
010136	000100	2352	07	000	6551		LDA	=0100,DL			
010137	010653	2552	00	010	6552		ORSA	CNECT+3	SET AUX-PTW BIT IN PCW ODD		
					6553	*					
					6554	*	COMPLETE	TO BUILD IOM BASE AND BOUND			
					6555	*		TO BUILD PTW POINTER AND FLAG BIT OF PCW ODD			
					6556	*		TO BUILD PTW OF AUX-PTW			
					6557	*					
					6558	*					
					010140	6559	NOAUX	NULL			
					6560						
010140	003430	2362	17	010	6561		LDQ	QSAVE,7	RESTORE PMB IMAGE		
010141	020007	2352	07	000	6562		LDA	=020007,DL	PATTERN OF TDCW		
					6563						
					6564	*			BIT (34) ON (NO MORE IDCW'S), RELATIVE		
					6565	*			BIT (35) ON (DATA SEGMENTED), AND PDCW		
					6566	*			BIT (33) CN (DCW'S PAGED, GOING TO SEGMENTED)		
					6567						
010142	300003	7553	13	000	6568		STA	EXMB4,EMX,P.EMB	INITIALIZE OF TDCW WORD		
010143	000001	2352	07	000	6569		LDA	1,DL		EL8.	
010144	300001	7553	13	000	6570		STA	EXMB2,EMX,P.EMB	IOTD OF 1 WORD	EL8.	
010145	010653	7202	00	010	6571		LXLO	CNECT+3	TEST MODE, IS AUX		
010146	000100	3002	03	000	6572		CANXO	=0100,DU			
010147	010154	6012	00	010	6573		TNZ	NREL	YES, NO RELOCATION		
010150	701001	2203	11	000	6574		LDXO	.CRMB2,1,P.CR	GET BASE VALUE		
010151	701001	0203	11	000	6575		ADLXO	.CRMB2,1,P.CR	BASE*2		
010152	300001	7403	13	000	6576		STXO	EXMB2,EMX,P.EMB	SET IN FIRST DCW WORD		
010153	300003	7403	13	000	6577		STXO	EXMB4,EMX,P.EMB	SET IN TDCW WORD		
					6578						
					010154	6579	NREL	NULL			
010154	100001	7203	14	000	6580		LXLO	.WEPRV,4,P.IOQ	TEST DATA REGION		
010155	002000	3002	03	000	6581		CANXO	.FFDD1,DU	IS PRESENT FIRST		
010156	010162	6002	00	010	6582		TZE	*+4	NO DATA REGION		
010157	100007	2253	14	000	6583		LDX5	.WEOFF,4,P.IOQ	GET FIRST DCW ADDRESS		
010160	300001	0253	13	000	6584		ADLX5	EXMB2,EMX,P.EMB	ADD IOM BASE		
010161	300001	7453	13	000	6585		STX5	EXMB2,EMX,P.EMB	SET IN EXMB2		
010162	001000	3002	03	000	6586		CANXO	.FFDD2,DU	IS PRESENT SECOND		
010163	010170	6002	00	010	6587		TZE	ONEDCW	NO, ONE DCW PRESENT		
010164	100007	7253	14	000	6588		LXL5	.WEOFF,4,P.IOQ	GET SECOND DCW OFFSET		
010165	300003	0253	13	000	6589		ADLX5	EXMB4,EMX,P.EMB	ADD IOM BASE		
010166	300003	7453	13	000	6590		STX5	EXMB4,EMX,P.EMB	SET IN TDCW WORD		
010167	010172	7102	00	010	6591		TRA	ENDCW	END OF DCW PROCESS		

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010227	010232	6002	00	010	6642	TZE	FIX1	ZERO CHANNEL COMMAND	
010230	000006	7712	00	000	6643	ARL	6		
010231	300002	2553	13	000	6644	ORSA	EXMB3,EMX,P.EMB	CHAN. COMMAND INTO BITS 24-29	
		010232			6645	FIX1	NULL		
010232	701003	2353	11	000	6646	LDA	.CRMB4,1,P.CR		
010233	000007	3752	07	000	6647	ANA	7,DL	PMB SWITCH	
010234	000001	1152	07	000	6648	CMPA	1,DL		
010235	010240	6002	00	010	6649	TZE	PMB2	PMB LESS DEV. & CHAN# IN Q-REG	
010236	010243	6032	00	010	6650	TRC	SETSA	COMPLETE PMB IS IN Q-REG	
					6651	*			
010237	100006	2363	14	000	6652	PMB1	LDQ	.WEICM,4,P.IOQ	GET PMB FROM I/O ENTRY
		010240			6653	PMB2	NULL		
010240	014067	3762	00	010	6654	ANQ	=0770000777777	RETRIVE COMMAND WITHOUT DEV/CHNL#	
010241	300000	2763	13	000	6655	ORQ	EXMB1,EMX,P.EMB	COMPLETE PMB IMAGE	
010242	300000	7563	13	000	6656	STQ	EXMB1,EMX,P.EMB	& STORE IT	

EL8.
EL8.

 AT THIS POINT THE Q-REG CONTAINS THE PMB IMAGE
 DEVICE COMMAND BITS 0-5
 MBZ BIT 6
 DEVICE NUMBER BITS 7-11
 CHANNEL NUMBER BITS 12-17
 ICM CHAN. COMMAND BITS 18-23
 MBZ BITS 24-29
 RECORD COUNT BITS 30-35

					6657	*		
					6658	*		
					6659	*		
					6660	*		
					6661	*		
					6662	*		
					6663	*		
					6664	*		
					6665	*		
					6666	*		
					6667	*		
		010243			6668	SETSA	NULL	SET UP EXMB2 AND LIMITS
010243	010653	7222	00	010	6669	LXL2	CNECT+3	TEST , DATA PRESENT
010244	000400	3022	03	000	6670	CANX2	=0400,DU	
010245	010272	6002	00	010	6671	TZE	SLMT4	NO DATA
010246	701003	2223	11	000	6672	LDX2	.CRMB4,1,P.CR	TEST REQUEST TYPE
010247	000001	1022	03	000	6673	CMPX2	1,DU	IS FIRST COMMAND ONLY
010250	010274	6032	00	010	6674	TRC	SLMT5	YES
010251	000000	6222	06	000	6675	EAX2	,QL	TEST COMMAND TYPE
010252	770000	3622	03	000	6676	ANX2	=0770000,DU	RETRIVE CHANNEL COMMAND
010253	010272	6002	00	010	6677	TZE	SLMT4	NORMAL SEQUENCE
010254	240000	1022	03	000	6678	CMPX2	=0240000,DU	IS DUAL COMMAND
010255	010260	6002	00	010	6679	TZE	*+3	YES
010256	400000	1022	03	000	6680	CMPX2	=0400000,DU	IS PSI COMMAND
010257	010272	6012	00	010	6681	TNZ	SLMT4	NO, NORMAL CONNECT
010260	006013	4706	07	000	6682	LDP	PO,SD,IOQ,DL	
010261	000016	6707	14	000	6683	LDD	PO, WEDRI,4,PO	GET FIRST DARA REGION DESC.
010262	010660	2342	17	010	6684	SZN	DSFLG,7	IS SAME WORKING SPACE
010263	010267	6002	00	010	6685	TZE	FDDAT	YES,
					6686			NO, GET TO ABSOLIZE
010264	003430	7562	17	010	6687	STQ	QSAVE,7	SAVE PMB IMAGE
010265	013053	7002	00	010	6688	TSXO	ADESC	ABSOLIZE
					6689			PO=ABS. DESCRIPTOR
010266	003430	2362	17	010	6690	LDQ	QSAVE,7	RESTORE PMB IMAGE
		010267			6691	FDDAT	NULL	

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010267	100012	2353	14	000	6692	LDA	.WEFDC,4,P.I0Q		
010270	000000	2353	01	000	6693	LDA	0,AU,FO	GET FIRST DATA	
010271	300005	7553	13	000	6694	SLMT2 STA	EXMB6,EMX,P.EMB	STORE SEEK ADDR. DATA WORD INTO EXMB6	
010272	000005	6222	13	000	6695	SLMT4 EAX2	EXMB6,EMX	ABS. SEEK ADDR. POINTER (TO EXMB6)	
010273	300001	7423	13	000	6696	STX2	EXMB2,EMX,P.EMB	STORE INTO EXMB2	
					6697	*			
					6698	*			
	010274				6699	SLMT5	NULL		
					6700	*			
					6701	*			
					6702	*			
								SET UP CONNECT PCW/IDCW AT EXMB1	
010274	300000	7563	13	000	6703	STQ	EXMB1,EMX,P.EMB	PUT PMB INTO EXMB1	
010275	014070	2352	00	010	6704	LDA	=0000077777700		
010276	300000	3753	13	000	6705	ANA	EXMB1,EMX,P.EMB	GET CHANNEL COMMAND	
010277	300000	6553	13	000	6706	ERSA	EXMB1,EMX,P.EMB	ZERO ALL FIELDS BUT INST, ADDR, & TAL	
010300	770000	3752	07	000	6707	ANA	=0770000,DL		16FW1060
010301	000006	7712	00	000	6708	ARL	6	CHNL CMD TO 24-29	16FW1070
010302	002400	1152	07	000	6709	CMPA	=02400,DL	IS CHAN. COMMAND 24	
010303	010306	6002	00	010	6710	TZE	INSTZ	YES, ZERO IT	
010304	000400	1152	07	000	6711	CMPA	=00400,DL	IS CHAN. COMMAND 04	
010305	010307	6012	00	010	6712	TNZ	LOGIC	NO	
010306	000000	2352	03	000	6713	INSTZ LDA	0,DU	ZERO CHANNEL COMMAND	
					6714	*			
					6715	*		THE PCW/IDCW CHANNEL COMMAND IS BEING HELD	
					6716	*		IN A-REG FOR STORAGE AT EXMB1	
					6717	*			
	010307				6717	LOGIC	NULL	ADJUST POINTERS FOR SINGLE/DUAL COMMANDS,	
					6718	*		CFI/PSI CHANNELS, ETC.	
					6719	*			
010307	701003	2223	11	000	6720	LDX2	.CRMB4,1,P.CR	CONNECT SEQUENCE SWITCH	
010310	010317	6002	00	010	6721	TZE	NORML	0-- ISSUE NORMAL COMMAND SEQUENCE	
010311	000002	1022	03	000	6722	CMPX2	2,DU		
010312	010402	6002	00	010	6723	TZE	TOEX4	2-- ISSUE SECOND ONLY OF DUAL COMMAND	
010313	010405	6032	00	010	6724	TRC	TOEX2	3-- ISSUE FIRST ONLY OF DUAL COMMAND	
					6725	*		(SINGLE DCWS ONLY -- PRESEE	
					6726	*		1-- ISSUE FIRST ONLY OF DUAL COMMAND	
					6727	*		(MULTIPLE DCW'S ALLOWED)	
					6728	*			
					6729	*			
					6730	*		MAKE THIS A SINGLE PART COMMAND	
					6731	*		USING THE FIRST COMMAND. GET THE FIRST DCW POINTER	
					6732	*		FROM I/O ENTRY+6, LESS ONE, SINCE MULTIPART	
					6733	*		TYPEWRITER COMMANDS WILL HAVE THE FIRST TWO	
					6734	*		DCW'S IN SEQUENCE.	
010314	300003	7223	13	000	6735	LXL2	EXMB4,EMX,P.EMB	GET LOWER HALF OF TDCW	
010315	300001	4423	13	000	6736	SXL2	EXMB2,EMX,P.EMB	MOVE REMAINDER OF TDCW TO EXMB2	
010316	010405	7102	00	010	6737	TRA	TOEX2		
					6738	*			
					6739	NORML	NULL	NORMAL COMMAND SEQUENCE	
010317	000000	6222	06	000	6740	EAX2	0,QL		
010320	770000	3622	03	000	6741	ANX2	.FCCMD,DU	FIRST CHANNEL COMMAND FROM PMB	

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010321	240000	1022	03	000	6742	CMPX2	=0240000,DU	IS THIS A DUAL COMMAND	
010322	010404	6002	00	010	6743	TZE	CNTUE	YES, ISSUE IT AS A DUAL COMMAND	
010323	400000	1022	03	000	6744	CMPX2	=0400000,DU	NO, IS THIS A SPECIAL MPC CHAN. COMMA	
010324	010370	6012	00	010	6745	TNZ	CMD10	NO, ISSUE CONNECT AS A SINGLE COMMAND	
					6746 *				
					6747				
								PROCESS SPECIAL MPC CONTROLLER COMMANDS	
010325	000000	6222	06	000	6748	EAX2	0,QL	YES	
010326	000077	3622	03	000	6749	ANX2	=077,DU	FIRST COMMAND RECORD COUNT FIELD	
010327	000002	1022	03	000	6750	CMPX2	2,DU	IS THIS A MULTIPLE COMMAND	
010330	010400	6022	00	010	6751	TNC	TOEXS	NO, SINGLE	IOS04AAM
					6752 *				
					6753 *				
					6754 *			MAKE THIS A SINGLE COMMAND BUT TRANSFER TO USER WITH IDCW CAPABILITY	
010331	300003	7223	13	000	6755	LXL2	EXMB4,EMX,P.EMB	TDCW AT EXMB4	
010332	777775	3622	03	000	6756	ANX2	=0777775,DU		
010333	300003	4423	13	000	6757	SXL2	EXMB4,EMX,P.EMB		EL8.
010334	000000	6202	02	000	6758	EAX0	0,QU		EL8.
010335	770000	3602	03	000	6759	ANX0	=0770000,DU	DEVICE CMD	EL8.
010336	100000	1002	03	000	6760	CMPX0	=0100000,DU	IS IT '10'	EL8.
010337	010357	6002	00	010	6761	TZE	CTND	YES	EL8.
010340	470000	3602	03	000	6762	ANX0	=0470000,DU		EL8.
010341	020000	1002	03	000	6763	CMPX0	=0020000,DU	IS IT 02,12,22,32 CMD	EL8.
010342	010357	6002	00	010	6764	TZE	CTND	YES	EL8.
010343	300001	4423	13	000	6765	SXL2	EXMB2,EMX,P.EMB	RESTRICTED BIT (#34) TURNED OFF TO ALLOW MORE IDCW'S	
					6766 *				
010344	000000	6222	02	000	6767	EAX2	0,QU		
010345	770000	3622	03	000	6768	ANX2	=0770000,DU	FIRST DEVICE COMMAND	
010346	310000	1022	03	000	6769	CMPX2	=0310000,DU	IS THIS A "31" COMMAND	
010347	010404	6012	00	010	6770	TNZ	CNTUE	NO, ISSUE FIRST HALF AS A SINGLE COMM WITH CONTINUE BIT ON FOR MORE IDCW	
					6771 *				
010350	100013	2223	14	000	6772	LDX2	.WEIOS,4,P.IOQ		EL8.
010351	777776	1022	03	000	6773	CMPX2	-2,DU	TEST EXT STATUS CMD	29FW0240
010352	010363	6012	00	010	6774	TNZ	CSUSP	NO	29FW0250
010353	720000	2752	07	000	6775	ORA	=0720000,DL	YES, SET CHANNEL CMD	29FW0260
010354	300002	2553	13	000	6776	ORSA	EXMB3,EMX,P.EMB		29FW0270
010355	000003	6222	13	000	6777	EAX2	EXMB4,EMX		29FW0280
010356	010410	7102	00	010	6778	TRA	TOEX41		29FW0290
					6779 *				EL8.
010357	700000	2352	07	000	6780	CTND LDA	=0700000,DL	SET IDCW FLAG BITS	EL8.
010360	300002	2553	13	000	6781	ORSA	EXMB3,EMX,P.EMB		EL8.
010361	024000	2752	07	000	6782	ORA	=024000,DL	SET SPCL CHNL CMD & CONTINUE BIT	EL8.
010362	010405	7102	00	010	6783	TRA	TOEX2		EL8.
					6784 *				EL8.
					6785	CSUSP	NULL		29FW0300
		010363			6786				
010363	701200	7223	11	000	6786	LXL2	.CRI01,1,P.CR		
010364	000003	3022	03	000	6787	CANX2	3,DU	IS THIS A SUSPEND OR SUSP.COMMAND CHA	
010365	010404	6002	00	010	6788	TZE	CNTUE	NO, ISSUE FIRST HALF AS A SINGLE COMM WITH CONTINUE BIT ON FOR MORE IDCW	
					6789 *				
010366	020000	2352	07	000	6790	LDA	=020000,DL	CONTINUE BIT	EL8.
010367	010405	7102	00	010	6791	TRA	TOEX2	ISSUE FIRST HALF AS A SINGLE COMAND	EL8.

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

					6842 *						
					6843				(THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)		
		010427			6844 RSET	NULL					
010427	010652	7552 00	010		6845	STA	CNECT+2		STORE CONNECT CHANNEL PCW EVEN		
					6846 *				-----		
					6847 *						
010430	000000	6352 02	000		6848	EAA	0,QU		PMB		
010431	000077	3752 03	000		6849	ANA	=077,DU		CHANNEL NUMBER		
010432	000040	1152 03	000		6850	CMPA	32,DU		DOES IOM CHANNEL# EXCEED 31		
010433	010523	6032 00	010		6851	TRC	SEXIT		YES, DON'T CONNECT		16FW0520
010434	000011	7352 00	000		6852	ALS	9		CHAN.# IN BITS 3-8, OTHERS ZERO		
					6853 *						
010435	010653	2552 00	010		6854	ORSA	CNECT+3		SET CHANNEL # OF PCW ODD		
					6855						
					6856						
					6857						
					6858						
					6859						
					6860				(THIS IS AN EXTERNAL CONNECTION INTO STIO ROUTINE)		
		010436			6861 RSET2	NULL					
010436	000000	6352 11	000		6862	EAA	0,1		TRUE CHANNEL INDEX TO AU		
010437	777600	3752 03	000		6863	ANA	=0777600,DU		384 * IOM NUMBER		
010440	001012	6352 01	000		6864	INITMB	EAA	.CRMB3+8,AU	ABSOLUTIZE THE CONNECT CHANNEL ADDRES		
010441	020001	2752 07	000		6865	ORA	=0020001,DL		CONNECT CH LPW WITH CONTROL & TALLY B		
010442	010650	7552 00	010		6866	STA	CNECT		CONNECT CHANNEL LPW TO IMAGE		
					6867 *				NO LPW EXT. IS NEEDED WITH ABS. ADDRESS		
010443	000000	6242 14	000		6868	EAX4	0,4				
010444	010461	6002 00	010		6869	TZE	NOTLK		RESET PCW OR IOM DIR DATA CHAN COMMAN		
					6870 *						
					6871 *						
					6872 *						
					6873 *				CONNECT CHANNEL IMAGE IS NOW LOADED		
010445	377777	2222 03	000		6874	LDX2	=0377777,DU				
010446	377776	3423 13	000		6875	ANSX2	EXMB1-2,EMX,P.EMB		TURN OFF CHAN. STATUS WORD SYNC BIT		
010447	701202	0543 11	000		6876	AOS	.CRIO3,1,P.CR		COUNT CONNECT ON CHANNEL		
010450	700736	0543 00	000		6877	AOS	.CRICN,,P.CR		COUNT TOTAL CONNECTS		
010451	701203	7223 11	000		6878	LXL2	.CRIO4,1,P.CR				
010452	003774	3622 03	000		6879	ANX2	.FCHNX,DU		LOGICAL CHANNEL INDEX		
010453	010000	2352 07	000		6880	LDA	.FMLTD,DL		IS THIS MULTI DEVICE CHANNEL		
010454	701400	3153 12	000		6881	CANA	.CRCT1,2,P.CR				
010455	010461	6002 00	010		6882	TZE	NOTLK		NOT A MULTI-DEVICE CHANNEL		
010456	100004	2353 14	000		6883	LDA	.WESCT,4,P.IOQ		ABS. ADDR. DEVICE SCT TABLE		
010457	000117	3752 00	010		6884	ANA	.FSCT2				
010460	700002	0543 01	000		6885	AOS	2,AU,P.CR		COUNT CONNECT ON DEVICE		
		010461			6886	NOTLK	NULL				
010461	701400	2353 12	000		6887	LDA	.CRCT1,2,P.CR		IOM NUMBER FOR CHANNEL		
010462	003000	3752 03	000		6888	ANA	.FIOCN,DU				
010463	000011	7712 00	000		6889	ARL	9				
010464	006133	4706 07	000		6890	LDP	PD,SD,KL,DL		GET KL DESCRIPTOR		IOS05950
010465	000000	6222 01	000		6891	EAX2	0,AU		IOM NUMBER		

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010466	000133	2203	12	000	6892	LDXO	.KLICN,2,PO	THIS IOM CONNECT CHANNEL ADDEND IN XO	
					6893 *				
					6894 *			CHECK CONNECT CHANNEL	
					6895 *				
010467	001706	6776	00	010	6896	LDD	P.CR,EYPCR	USE CR WITH CACHE BYPASS	IOS05485
010470	007777	2352	07	000	6897	LDA	=07777,DL	MASK FOR TALLY	IOS05490
010471	701010	3153	10	000	6898	CANA	.CRMB1+8,0,P.CR	IS CONNECT CHANNEL FREE	IOS05495
010472	010471	6012	00	010	6899	TNZ	*-1	NO, LOOK AGAIN	IOS05500
					6900 *				IOS05505
					6901 *			CONNECT CHANNEL FREE - ISSUE CONNECT	IOS05510
					6902 *				IOS05515
010473	010650	2372	00	010	6903	LDAQ	CNECT	CIOC CHANNEL WORD 1	EL8.
010474	701010	7573	10	000	6904	STAQ	.CRMB1+8,0,P.CR		EL8.
010475	010652	2372	00	010	6905	LDAQ	CNECT+2	GET PCW EVEN/ODD	IOS05525
010476	701012	7573	10	000	6906	STAQ	.CRMB3+8,0,P.CR	SET IMAGE 3 8 4	IOS05530
010477	300004	7563	13	000	6907	STQ	EXMB5,EMX,P.EMB	SAVE PCW ODD	IOS05535
					6908 *				
010500	000100	0153	12	000	6909	CIOC	.KLCIC,2,PO	ISSUE CONNECT TO SELECTED IOM	
					6910 *				
010501	006130	4776	07	000	6911	LDP	P.CR,SD,CR,DL	RESTORE CR SEGMENT DESCRIPTOR	IOS04870
	010502				6912	CONACT NULL	FROM CHANNEL	MODULE EXIT #7	
					6913 *				
					6914 *			REGISTERS	
					6915 *			QR= PMX IMAGE	
					6916 *			XC= PMX INDEX	
					6917 *			X1= TRUE CHANNEL INDEX	
					6918 *			X2= IOM NUMBER	
					6919 *			X3= DESTROYED	
					6920 *			X4= I/O ENTRY	
					6921 *			X5= DESTROYED	
					6922 *			X6= KPX FROM I/O ENTRY	
					6923 *			X7= CPUNO	
					6924				
010502	700040	4133	00	000	6925	RSCR	32,,P.CR	GET SCU CLOCK	IOS04880
010503	701201	7563	11	000	6926	STQ	.CRIO2,1,P.CR	SAVE CONNECT TIME FOR CHANNEL	
010504	000000	6352	14	000	6927	EAA	0,4	I/O ENTRY ADDRESS	14FW1710
010505	010523	6002	00	010	6928	TZE	SEXIT	NULL, DON'T TRACE	14FW1720
					6929				
					6930				
					6931				
					6932 *			* * * * * CONNECT TRACE * * * * *	IOS06775
					6933				
					6934			EXECUTE CIOC TO START I/O	
					6935				
					6936				
	010506					.TROPN	SEXIT,GREG		11FW0900
010506	700044	7173	00	000		XED	.CRTRV+2,,P.CR		
010507	000014	7102	04	10523		TRA	SEXIT,\$		
010510	700312	2203	17	000	6937	LDXO	.CRTEP,7,P.CR		
010511	000044	2752	07	000	6938	ORA	.YCIOC,DL	ADD TRACE TYPE	14FW1740
010512	700000	7553	10	000	6939	STA	0,0,P.CR	PUT INTO TRACE	14FW1750

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010513	700001	7413	10	000	6940	STX1	1,0,P.CR	SET TRUE CHANNEL INDEX	
010514	300000	2353	13	000	6941	LDA	EXMB1,EMX,P.EMB	GET PMBX	IOS06140
010515	010653	2362	00	010	6942	LDQ	CNECT+3	GET PCW ODD	IOS06145
010516	700002	7573	10	000	6943	STAQ	2,0,P.CR	INTO TRACE	IOS06150
010517	010654	2252	17	010	6944	LDX5	STI03,7	GET RETURN IC	IOS06170
010520	700002	4453	10	000	6945	SXL5	2,0,P.CR	PUT IN PCW EVEN, LOWER	IOS06175
					6946				
					6947				
		010521							
010521	000000	6202	00	000		.TRPUT	PNO		
010522	700052	7173	00	000		EAXO	0		
						XED	.CRTRV+8,,P.CR		

6948

6949

6950 * * * * * T R A C E E N D

6951

6952

6953

		010523			6954	SEXIT	NULL		11FWC920
010523	010654	2232	17	010	6955	LDX3	STI03,7	RESTORE RETURN ADDRESS	11FWC930
		010524			6956	.OPEN	.CRGGT,,P.CR		11FWC940
010526	006145	4766	07	000	6957	LDP	P.SSA,SD.SSA,DL		11FW0950
010527	000000	7102	13	000	6958	TRA	0,3	RETURN TO CALLER	11FW0960

6959 *

6960 *

T A B L E O F C H A N N E L P R O G R A M C O N T R O L

		010530			6961	CPCT	NULL		
010530	000000	0112	00	000	6962	NOP		NO CHANNEL PROGRAM	
		000001			6963	CHN1	EQU *-CPCT	PROGRAM# 1 DS NORMAL PROCESS	
010531	010535	7102	00	010	6964	TRA	CHNL1		
		000002			6965	CHN2	EQU *-CPCT	PROGRAM# 2 RQS/RESS COMMAND	
010532	010611	7102	00	010	6966	TRA	CHNL2		
		000003			6967	CHN3	EQU *-CPCT	PROGRAM# 3 NORMAL 3 WORDS COMMAND	
010533	010616	7102	00	010	6968	TRA	CHNL3		
		000004			6969	CHN4	EQU *-CPCT	PROGRAM# 4 NON DATA TRANSFER COMMAND	
010534	010616	7102	00	010	6970	TRA	CHNL4		

6971 *

6972 *

6973

6974

6975

6976

6977

6978 *

6979 *

C H A N N E L P R O G R A M P R O C E S S I N T E R F A C E

6980 *

R E G I S T E R C O N V E N S I O N ;

6981 *

X0 = CHANNEL PROGRAM NUMBER

6982 *

X1 = TRUE CHANNEL INDEX

6983 *

X2 = LOGICAL CHANNEL INDEX

6984 *

R E T U R N

6985 *

Q = PMB IMAGE

6986 *

X2 = LPW POINTER

6987 *

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

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6988
6989
6990
6991
6992
6993
6994 *
6995 *   P R O G R A M   0 1
6996 *
6997 *
6998 *   M A S S   S T O R E   N O R M A L   C O M M A N D   S E Q U E N C E
6999 *   S E E K   T H E N   R E A D / W R I T E
7000 *
010535
010535 100006 2353 14 000 7001 CHNL1 NULL
010536 014072 3152 00 010 7002 LDA .WEICM,4,P.I0Q GET SEEK DATA
010537 010557 0112 00 010 7003 CANA =077777770 IS I/O TO PACK HEADER IOS04AAM
7004 NOP CHNLH MAYBE SO (TZE WHEN READY) IOS04AAM
010540
7005 CHNLN NULL NO IOS04AAM
010540 300005 7553 13 000 7006 STA EXMB6,EMX,P.EMB SET IN CHANNEL PROGRAM
010541 300000 2363 13 000 7007 LDQ EXMB1,EMX,P.EMB EL7.
010542 014073 2762 00 010 7008 ORQ =0340C00720000 SEEK COMMAND EL7.
010543 300000 7563 13 000 7009 STQ EXMB1,EMX,P.EMB EL7.
010544 000005 6222 13 000 7010 EAX2 EXMB6,EMX SET FIRST DATA ADDRESS (SEEK DATA)
010545 300001 7423 13 000 7011 STX2 EXMB2,EMX,P.EMB IN FIRST DCW (ONE SEEK DATA)
010546 100001 7223 14 000 7012 LXL2 .WEPRV,4,P.I0Q TEST DMM SPECIAL INTERFACE
010547 000400 3022 03 000 7013 CANX2 .FFDMM,DU
010550 010555 6002 00 010 7014 TZE CNL11 NO DMM REQUEST
7015 DMM SPECIAL REQUEST
010551 000003 3352 07 000 7016 LCA 3,DL RESTRICTED BIT(34) TURN OFF TO ALLOW
010552 300003 3553 13 000 7017 ANSA EXMB4,EMX,P.EMB MORE IDCW'S
010553 020000 2352 07 000 7018 LDA =020000,DL AND SECOND IDCW
010554 300002 2553 13 000 7019 ORSA EXMB3,EMX,P.EMB
7020 *
010555
010555 000001 6222 13 000 7021 CNL11 NULL
010556 010410 7102 00 010 7022 EAX2 EXMB2,EMX LPW POINTER TO EXMB2
7023 TRA TOEX4 1
7024
010557 000004 3152 07 000 7025 CHNLH CANA 4,DL IS BLK 4-7 IOS04AAM
010560 000003 6002 04 000 7026 TZE 3,IC NO, 0-3 IOS04AAM
010561 000003 3152 07 000 7027 CANA 3,DL IS BLK 4 IOS04AAM
010562 010540 6012 00 010 7028 TNZ CHNLN NO, NORMAL I/O IOS04AAM
010563 000000 6222 01 000 7029 EAX2 0,AU YES, HEADER I/O IOS04AAM
010564 000100 1022 03 000 7030 CMPX2 1*64,DU IS BLK LIMIT =1 IOS04AAM
010565 010574 6012 00 010 7031 TNZ CHNLZ NO, BAD NEWS IOS04AAM
010566 100005 2223 14 000 7032 LDX2 .WEPEP,4,P.I0Q YES IOS04AAM
010567 000002 3022 03 000 7033 CANX2 .FBT34,DU IS REQUEST WRITE IOS04AAM
010570 010540 6002 00 010 7034 TZE CHNLN NO IOS04AAM
010571 020000 2222 03 000 7035 LDX2 .FBT4,DU YES IOS04AAM
010572 100011 2423 14 000 7036 ORSX2 .WEFCM,4,P.I0Q MAKE IT WDICV IOS04AAM
010573 010540 7102 00 010 7037 TRA CHNLN IOS04AAM

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S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010574	100004	2223	14	000	7038 *					IOS04AAM
					7039	CHNLZ	LDX2	.WESCT,4,P.IOQ		IOS04AAM
010575	003774	3622	03	000	7040		ANX2	.FCHNX,DU	DEVICE SCT	IOS04AAM
010576	700001	2223	12	000	7041		LDX2	1,2,P.CR	SCT1	IOS04AAM
010577	000020	3022	03	000	7042		CANX2	.FBI13,DU	IS PACK STRUCTURED	IOS04AAM
010600	010540	6012	00	010	7043		TNZ	CHNLN	NO, LET I/O THRU	IOS04AAM
010601	000070	7162	00	010	7044		XEC	DBUG	NO, SHALL WE TILT	IOS04AAM
				010602	7045		ZOP	13	YES	IOS04AAM
010603	006133	4736	07	000	7046		LDP	P.KL,SD,KL,DL		IOS04AAM
010604	300044	1063	17	000	7047		CMPX6	.KLPRG,7,P.KL	IS THIS JOB IN EXECUTION	IOS04AAM
010605	777775	6012	04	000	7048		TNZ	-3,IC	NO, TILT	IOS04AAM
				010606	7049		.OPEN	.CRGGT,,P.CR	YES, OPEN GATE	IOS04AAM
010610	005412	7102	00	010	7050		TRA	IABSA	ABORT JOB WITH .AC107 CODE	IOS04AAM
				7051 *						16FW0940
				7052 *		P R O G R A M		C 2		16FW0950
				7053 *						16FW0960
				7054 *				REQS/RESS STATUS COMMAND		16FW0970
				7055 *						16FW0980
010611	700201	2222	03	000	7056	CHNL2	LDX2	=0700201,DU		16FW0990
010612	300002	4423	13	000	7057		SXL2	EXMB3,EMX,P.EMB		16FW1000
010613	000003	6222	13	000	7058		EAX2	EXMB4,EMX		16FW1010
010614	300001	2363	13	000	7059		LDQ	EXMB2,EMX,P.EMB		16FW1020
010615	010410	7102	00	010	7060		TRA	TOEX41		16FW1030
				7061						
				7062 *						
				7063 *		P R O G R A M		O 3		
				7064 *						
				7065 *				NORMAL 3 WORDS COMMAND SEQUENCE		
				7066 *						
				7067 *		P R O G R A M		O 4		
				7068 *						
				7069 *				NON DATA TRANSFER COMMAND SEQUENCE		
				7070 *						
				7071 *						
				7072 *						
				010616	7073	CHNL3	NULL			
				010616	7074	CHNL4	NULL			
010616	100006	2353	14	000	7075		LDA	.WEICM,4,P.IOQ	RETRIVE DEVICE AND CHANNEL COMMAND	
010617	014046	3752	00	010	7076		ANA	=0770C00770077	AND RECORD COUNT	
010620	300000	2553	13	000	7077		ORSA	EXMB1,EMX,P.EMB	SET IN EXMB1	
010621	770000	3752	07	000	7078		ANA	=0770C00,DL	GET CHANNEL COMMAND	16FW0870
010622	240000	1152	07	000	7079		CMPA	=0240000,DL	IS IT DUAL	16FW0880
010623	010637	6002	00	010	7080		TZE	NDSNL	YES	16FW0890
010624	040000	1152	07	000	7081		CMPA	=0040000,DL	NO, IS IT STD	16FW0900
010625	010637	6002	00	010	7082		TZE	NDSNL	YES	16FW0910
010626	000006	7712	00	000	7083		ARL	6	ALIGN CHNL CMD	16FW0920
010627	300000	2553	13	000	7084		ORSA	EXMB1,EMX,P.EMB	NO, OTHER COMMAND SET IN PCW	
010630	001000	1152	07	000	7085		CMPA	=0100C,DL	IS SINGLE CHARACTER COMMAND	
010631	010637	6012	00	010	7086		TNZ	NDSNL	NO	
010632	000100	3352	07	000	7087		LCA	64,DL	YES, ZERO RECORD COUNT FIELD	

S T A R T I / O --- SEND \$CON FOR SELECTED ENTRY

010633	300000	3553	13	000	7088	ANSA	EXMB1,EMX,P.EMB	
010634	100012	2353	14	000	7089	LDA	.WEFDC,4,P.I0Q	RETRIVE SINGLE CHARACTER
010635	000036	7712	00	000	7090	ARL	30	AND SET IN PMB
010636	300000	2553	13	000	7091	ORSA	EXMB1,EMX,P.EMB	
					7092	*		
					7093	*	COMPLETE EXMB1	PMB
		010637			7094	NDSNL	NULL	
010637	300000	2353	13	000	7095	LDA	EXMB1,EMX,P.EMB	COPY PMB IN EXMB3
010640	300002	7553	13	000	7096	STA	EXMB3,EMX,P.EMB	
010641	770001	3362	07	000	7097	LCQ	=0770001,DL	ZERO CHANNEL COMMAND FIELD
010642	300002	3763	13	000	7098	ANQ	EXMB3,EMX,P.EMB	
010643	700000	2762	07	000	7099	ORQ	=0700000,DL	SET IDCW BITS
010644	300002	7563	13	000	7100	STQ	EXMB3,EMX,P.EMB	COMPLETE EXMB3
010645	000003	6222	13	000	7101	EAX2	EXMB4,EMX	LPW POINTER
010646	010410	7102	00	010	7102	TRA	TOEX4 1	
					7103	*		
					7104			
					7105	INHIB	OFF	
					7106	*		
010647	000000011007			000				
		010650			7107	CNECT	EBSS	4
		010654			7108	STI03	BSS	4
		010660			7109	DSFLG	BSS	4

I0S05545

EP# 22 COMMON MASS STORAGE REQUEST HANDLER

7111 *
 7112 * INPUT
 7113 * I/O ENTRY
 7114 * .WEIOS = LEGAL CCMMAND FLAGS AS DEFINED BELOW
 7115 * AND NORMAL BYPASS COUNT FOR DEVICE
 7116 * REGISTERS
 7117 * XR3 = SELECT SEQUENCE ADDRESS (VIA GEINOS)
 7118 * XR4 = ADDRESS OF I/O ENTRY
 7119 * XR5 = FLAG
 7120 * POSITIVE - PHYSICAL COMMAND REQUEST
 7121 * NEGATIVE - LOGICAL COMMAND REQUEST
 7122 * XR6 = KPX
 7123 * XR7 = CPUNO
 7124 * A = READ COMMAND FOR DEVICE CONTAINING IOM & RECCNT
 7125 *
 7126 * ODR1 = P.IOQ
 7127 * ODR3 = P.IOCB (VIA CALLIO)
 7128 * ODR6 = P.SSA
 7129 * ODR7 = P.CR

7130 * DEFINITION OF LEGAL COMMAND FLAG WORD

400000	7133	SEKBT	BOOL	400000	BIT 0	SEEK COMMAND
200000	7134	FSRBT	BOOL	200000	BIT 1	FORWARD SPACE RECORD(S) COMMAND
100000	7135	BSRBT	BOOL	100000	BIT 2	BACKSPACE RECORD(S) COMMAND
040000	7136	REWBT	BOOL	40000	BIT 3	REWIND COMMAND
020000	7137	RESBT	BOOL	20000	BIT 4	RESET STATUS COMMAND
010000	7138	REQBT	BOOL	10000	BIT 5	REQUEST STATUS COMMAND
004000	7139	READB	BOOL	4000	BIT 6	READ COMMAND
002000	7140	WRITB	BOOL	2000	BIT 7	WRITE COMMAND
001000	7141	WTVFB	BOOL	1000	BIT 8	WRITE VERIFY COMMAND
000100	7142	WRASC	BOOL	100	BIT 11	WRITE ASCII
000040	7143	RDASC	BOOL	40	BIT 12	READ ASCII
000020	7144	RDNSS	BOOL	20	BIT 13	READ NON-STANDARD SECTOR SIZE

7145 *
 7146 * BITS 9-10, 14-29 ARE NOT USED AT PRESENT
 7147 *
 7148 * BITS 30 - 35 CONTAIN SPECIAL BYPASS
 7149 * COUNT TO USE FOR RESS & REQS COMMANDS
 7150 *
 7151 *

000004 7152 WRTG BOOL 4 WRITING COMMAND ACCEPTED FOR FILE
 7153 * DEFINITION OF MASKS USED FOR COMMAND SEARCH

010664 007777777777 000 7155 MASKO OCT 7777777777

7156 *
 7157 * COMMAND TABLES

010665 340000000000 000 7159 CMDSO NULL
 010665 340000000000 000 7160 OCT 340000000000 SEEK COMMAND

EP# 22 COMMON MASS STCRAGE REQUEST HANDLER

010666	011051 0000 00	010	7161	ARG	CMDUL		
010667	440000020000	000	7162	OCT	440000020000	FSR	
010670	011034 0000 00	010	7163	ARG	CMFSR		
010671	460000020000	000	7164	OCT	460000020000	BSR	
010672	011041 0000 00	010	7165	ARG	CMBSR		
010673	700000020001	000	7166	OCT	700000020001	REW	
010674	011044 0000 00	010	7167	ARG	CMREW		
010675	400000020001	000	7168	OCT	400000020001	RESS	
010676	011046 0000 00	010	7169	ARG	CMREQ		
010677	000000020001	000	7170	OCT	000000020001	REQS	
010700	011046 0000 00	010	7171	ARG	CMREQ		
	000014		7172	DSTB2 EQU	*-CMD50		IOS03725
			7173	*			
	010701		7174	CMDS3 NULL			
010701	250000000000	000	7175	OCT	250000000000	READ	
010702	011104 001000	010	7176	VFD	18/CREAD,9/1		
010703	310000000000	000	7177	OCT	310000000000	WRITE	
010704	011110002000	010	7178	VFD	18/CWRIT,9/2		
010705	040000000000	000	7179	OCT	040000000000	READ NON-STANDARD SECTOR SIZE	
010706	011104 001000	010	7180	VFD	18/RDNSD,9/1		
010707	330000000000	000	7181	OCT	330000000000	WRITE VERIFY	
010710	011117002000	010	7182	VFD	18/CWTVF,9/2		
010711	320000000000	000	7183	OCT	320000000000	WRITE ASCII	
010712	011117002000	010	7184	VFD	18/CWDAC,9/2		
010713	230000000000	000	7185	OCT	230000000000	READ ASCII DSS190	
010714	011104 001000	010	7186	VFD	18/CRDAS,9/1		
			7187	*			
	000014		7188	DSTB3 EQU	*-CMD53		
			7189	*			
			7190	*			
			7191	*			
	010715		7192	LCMDT NULL		LOGICAL COMMAND TABLE	
010715	00 0000 020001 000		7193	REQS		04 - REQS	CALL8485
010716	40 0000 020001 000		7194	RESS		05 - RESS	CALL8490
010717	70 0000 020001 000		7195	REW		06 - REW	CALL8495
	010720		7196	LCMDTR NULL		MULTI RECORD COMMAND	
010720	44 0000 020000 000		7197	FSR	0	07 - FSR	CALL8505
010721	46 0000 020000 000		7198	BSR	0	10 - BSR	CALL8510
	000005		7199	LCMDTL EQU	*-LCMDT		
			7200	*			
			7201	*		LOGICAL READ/WRITE COMMAND	
			7202	*			
	010722		7203	LDCDT NULL			
			7204			READ BLOCK	CALL8520
010722	340000240002	000	7205	OCT	340000240002	FIRST COMMAND	
010723	25 0000 002400 000		7206	RDIC		READ BINARY	
010724	000000 000000 000		7207	ZERO		ILLEGAL MODE (BCD)	
010725	23 0000 002400 000		7208	RDASC		READ ASCII	
			7209			WRITE BLOCK	CALL8530
010726	340000240002	000	7210	OCT	340000240002	FIRST COMMAND	

EP# 22 COMMON MASS STORAGE REQUEST HANDLER

010727	31	0000	002400	000	7211	WDIC		WRITE BINARY	
010730	000000	000000	000000	000	7212	ZERO		ILLEGAL MODE (BCD)	
010731	32	0000	002400	000	7213	WDASC		WRITE ASCII	
					7214				
		000010			7215	LDCDTL EQU	*-LDCDT		
					7216	*			
					7217	*			
					7218	*			
					7219	*			
		010732			7220	EVEN			CALL8595
		010732			7221	MSCIO NULL			
010732	000000	6250	15	000	7222	EAX5	,5	TEST REQUEST TYPE	
010733	011003	6050	00	010	7223	TPL	PCMD	IS PHYSICAL COMMAND REQUEST	
					7224	*			
					7225	*		LOGICAL COMMAND REQUEST	
					7226	*			
010734	300000	2351	00	000	7227	LDA	.IWCMD,,P.IOCB	TEST COMMAND TYPE	
010735	777000	3750	03	000	7228	ANA	=0777000,DU	RETRIVE COMMAND	
010736	005372	6000	00	010	7229	TZE	CMILG	ABCR	CALL8360
010737	000007	7710	00	000	7230	ARL	7	CMD*4	CALL8365
010740	000014	1150	03	000	7231	CMPA	3*4,DU	IS IT R/W (1,2)	CALL8370
010741	010770	6030	00	010	7232	TRC	NLRW	NO	CALL8375
010742	300000	0351	00	000	7233	ADLA	.IWCMD,,P.IOCB	YES, ADD IN MODE	CALL8380
010743	000177	3750	03	000	7234	ANA	=0177,DU		CALL8385
010744	010722	2360	00	010	7235	LDQ	LDCDT	SET SEEK COMMAND	CALL8390
010745	100006	7561	14	000	7236	STQ	.WEICM,4,P.IOQ	IN ENTRY	CALL8395
010746	300000	2361	00	000	7237	LDQ	.IWCMD,,P.IOCB	RETRIEVE MODE CODE	CALL8400
010747	000177	3160	03	000	7238	CANQ	=0177,DU	IS IT NULL	CALL8405
010750	000002	6010	04	000	7239	TNZ	2,IC	NO	CALL8410
010751	000001	6350	01	000	7240	EAA	1,AU	YES, USE BINARY	CALL8415
010752	000174	3160	03	000	7241	CANQ	=0174,DU	IS IT 1-3	CALL8420
010753	005372	6010	00	010	7242	TNZ	CMILG	NO, ABORT	CALL8425
010754	010716	2350	01	010	7243	LDA	LDCDT-4,AU	YES, GET 2ND COMMAND	CALL8430
010755	005372	6000	00	010	7244	TZE	CMILG	MODE BCD, ILLEGAL	
010756	100011	7551	14	000	7245	STA	.WEFCM,4,P.IOQ	SET SECOND COMMAND IN ENTRY	
010757	000400	3160	03	000	7246	CANQ	=0400,DU	IS PRESENT 'RECORD'	
010760	011003	6000	00	010	7247	TZE	PCMD	NO SINGL RECORD GO TO PHYSICAL	
010761	777777	3750	03	000	7248	ANA	-1,DU	MULTI, IGNORE CHANNEL COMMAND	
010762	060000	2750	07	000	7249	ORA	=0060000,DL	SET CHANNEL COMMAND (MULTI)	
010763	100011	7551	14	000	7250	STA	.WEFCM,4,P.IOQ	RE-SET SECOND COMMAND	
					7251			SET RECORD COUNT	
010764	300003	2351	00	000	7252	LDA	.IWGRR,,P.IOCB	RETRIVE RECORD COUNT	
010765	000077	3750	07	000	7253	ANA	=077,DL		
010766	100011	2551	14	000	7254	ORSA	.WEFCM,4,P.IOQ	SET IN I/O ENTRY	
010767	011003	7100	00	010	7255	TRA	PCMD	COMPLETE GO TO PHYSICAL	
					7256	*			
					7257	*		NON READ/WRITE LOGICAL COMMAND	
		010770			7258	NLRW	NULL		
010770	005372	6000	00	010	7259	TZE	CMILG	3 IS INVALID	CALL8445
010771	000002	7710	00	000	7260	ARL	2	CMD*1	CALL8450

EP# 22 COMMON MASS STORAGE REQUEST HANDLER

010772	000011	1150	03	000	7261	CMPA	LCMDTL+4,DU	IS IT WITHIN LIMITS	IOS01200
010773	005372	6030	00	010	7262	TRC	CMILG	NO, ABORT	CALL8460
010774	010711	2360	01	010	7263	LDQ	LCMDT-4,AU	GET COMMAND	CALL8465
010775	100006	7561	14	000	7264	STQ	.WEICM,4,P.IOQ		CALL8470
010776	000007	1150	03	000	7265	CMPA	LCMDTR-LCMDT+4,DU	IS IT MULTI-RECORD	CALL8475
010777	011003	6020	00	010	7266	TNC	PCMD	NO, NORMAL COOMAND	
011000	300003	2351	00	000	7267	LDA	.IWGRR,,P.IOCB	GET RECORD COUNT	
011001	000077	3750	07	000	7268	ANA	=077,DL		
011002	100006	2551	14	000	7269	ORSA	.WEICM,4,P.IOQ	SET IN I/O ENTRY	
					7270	*			
					7271	*	PHYSICAL COMMAND		
					7272	*			
					7273				
					7274	PCMD	NULL		
011003	100011	2351	14	000	7275	LDA	.WEFCM,4,P.IOQ	TEST CHANNEL COMMAND	
011004	770000	3750	07	000	7276	ANA	.FCCMD,DL	RETRIVE CHANNEL COMMAND	
011005	060000	1150	07	000	7277	CMPA	=0060C00,DL	IS MULTI RECORD COMMAND	
011006	011011	6000	00	010	7278	TZE	*+3	YES	CALL8605
011007	240002	2210	03	000	7279	LDX1	=0240002,DU	NO, USE STD CMD	CALL8610
011010	100011	4411	14	000	7280	SXL1	.WEFCM,4,P.IOQ	SET CHANNEL COMMAND	
011011	100006	2351	14	000	7281	LDA	.WEICM,4,P.IOQ	COMMAND # 1	
011012	010665	6210	00	010	7282	EAX1	CMDSD		
011013	010664	2360	00	010	7283	LDQ	MASKO		
011014	014300	5202	02	000	7284	RPT	DSTB2/2,2,TZE	SCAN FOR COMMAND	IOS03555
011015	000000	2110	11	000	7285	CMK	0,1		
011016	005372	6010	00	010	7286	TNZ	CMILG	NOT FOUND - ILLEGAL COMMAND	
					7287	*			
					7288	MTCH1	NULL		
011017	000000	6220	00	000	7289	EAX2	0	CLEAR PAT POINTER	
011020	100005	2201	14	000	7290	LDX0	.WEPEP,4,P.IOQ	RELATIVE PAT POINTER	
011021	777777	6000	31	000	7291	TZE	-1,1*	OK, GO TO COMMAND ROUTINE	IOS03580
011022	200000	2221	10	000	7292	LDX2	0,0,P.PAT		
011023	037777	3620	03	000	7293	ANX2	.FPTOF,DU	GET PAT BODY OFFSET	
					7294	*			
011024	200002	2361	12	000	7295	LDQ	2,2,P.PAT	PICK UP PAT FLAG WORD	
011025	001000	3160	03	000	7296	CANQ	.FMRND,DU	IS FILE RANDOM	
011026	011031	6000	00	010	7297	TZE	SETBS	NO, SET BUSY FLAG	
					7298	*			
011027	002600	3160	03	000	7299	CANQ	.FMPMF+.FMADP,DU	IS FILE TEMP/ALL DESCR IN CORE	IOS03565
011030	777777	6000	31	000	7300	TZE	-1,1*	YES, DONT SET BUSY	IOS03570
					7301	INHIB	ON		IOS03572
011031	100000	2362	07	000	7302	SETBS	LDQ	.FBSYF,DL	SET PAT BUSY FLAG
011032	200000	2563	10	000	7303	ORSQ	0,0,P.PAT	IN PAT POINTER WORD	
011033	777777	7102	31	000	7304	TRA	-1,1*	GO TO COMMAND ROUTINE	
					7305	*			
					7306	*	SINGLE COMMANDS		
					7307	*			
					7308	CMFSR	NULL	FORWARD SPACE RECORD, OK ON ALL DEVIC	
011034	100006	2363	14	000	7309	LDQ	.WEICM,4,P.IOQ	PICK UP COMMAND	
011035	000077	3762	07	000	7310	ANQ	=077,DL	ISOLATE RECORD COUNT	

EP# 22 COMMON MASS STORAGE REQUEST HANDLER

011102	000000	6252	11	000	7361	EAX5	,1	SAVE TABLE OFFSET	
011103	777777	7102	31	000	7362	TRA	-1,1*	GO TO COMMAND ROUTINE	
					7363	*			
					7364	*	SECOND COMMANDS		
					7365	*			
		011104			7366	CREAD	NULL		
		011104			7367	RDNSD	NULL		XXXX3410
		011104			7368	CRDAS	NULL		XXXX3420
011104	000000	6222	12	000	7369	EAX2	,2	TEST PAT POINTER	
011105	011130	6002	00	010	7370	TZE	BDPEM	NO PAT REQUEST	
					7371	*			
011106	500000	2212	03	000	7372	LDX1	.FRFRM+.FBT2,DU	GET READ/APPEND PERMISSION	IOS04AAM
011107	011125	7102	00	010	7373	TRA	CKPEM	CHECK PERMISSION	
					7374	*			
					7375				XXXX3440
011110	000000	6222	12	000	7376	CWRIT	EAX2 0,2	TEST PAT PTR	XXXX3450
011111	011130	6002	00	010	7377	TZE	BDPEM	NO	XXXX3460
011112	200000	2203	12	000	7378	LDX0	0,2,P.PAT	YES, GET 1ST WORD	XXXX3470
011113	000002	3002	03	000	7379	CANX0	.FBT16,DU	IS VERIFY SET	XXXX3480
011114	011121	6002	00	010	7380	TZE	CRITE	NO	XXXX3490
011115	020000	2752	03	000	7381	ORA	.FBT4,DU	YES, MAKE WDIC INTO WDICV	XXXX3500
011116	011121	7102	00	010	7382	TRA	CRITE		XXXX3510
					7383				XXXX3520
		011117			7384	CWDAC	NULL		IOS03690
		011117			7385	CWTVF	NULL		IOS03695
		011117			7386	WTTST	NULL		IOS03700
011117	000000	6222	12	000	7387	EAX2	,2	TEST PAT POINTER	
011120	011130	6002	00	010	7388	TZE	BDPEM	NO PAT REQUEST	
011121	200002	2363	12	000	7389	CRITE	LDQ 2,2,P.PAT	GET PAT FLAGS	XXXX3550
					7390	*			
011122	200000	2212	03	000	7391	LDX1	.FWPRM,DU	PICK UP WRITE PERMISSION FLAG	
011123	000004	2762	03	000	7392	ORQ	WRIG,DU	SET WRITING ACCEPTED IN PAT FLAG WORD	
011124	200002	7563	12	000	7393	STQ	2,2,P.PAT	REPLACE PAT FLAG WORD	IOS06850
					7394	*			
		011125			7395	CKPEM	NULL		
011125	100005	2203	14	000	7396	LDX0	.WEPEF,4,P.IOQ	PAT POINTER OFFSET	
011126	200000	3013	10	000	7397	CANX1	0,0,P.PAT	IS PERMISSION GRANTED	
011127	011135	6002	00	010	7398	TZE	ABTPM	NO, ABORT PROCESS	
					7399	*			
		011130			7400	BDPEM	NULL		
011130	777777	2362	15	000	7401	LDQ	-1,5	GET SEGMENT DESC. PERMISSION	
011131	000011	7722	00	000	7402	QRL	9	TO LOWER	
011132	000077	3762	07	000	7403	ANQ	=077,DL		
011133	100011	7553	14	000	7404	STA	.WEFCM,4,P.IOQ	STORE COMMAND INTO I/O ENTRY	
011134	005200	7102	00	010	7405	TRA	IDSDR	TWO DS/DR DATA TRANSFER	
					7406	*			
		011135			7407	ABTPM	NULL		
011135	000002	2202	03	000	7408	LDX0	.FMILP,DU	PERMISSION ILLEGAL FLAG	
011136	200002	2403	12	000	7409	ORSX0	2,2,P.PAT	IN PAT FOR FILSYS	
011137	005462	7102	00	010	7410	TRA	PERMS	ABORT, PERMISSION NOT GRANTED	

EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7412 *
7413 *      CALLING SEQUENCE CONTAINS ALL INTERNAL STORAGE CELLS USED
7414 *      DEFINED AS FOLLOWS
7415 *
000000 7416 BPL   EQU   0          BLOCK/LINK ON THIS DEVICE (NEGATIVE)
000001 7417 BPR   EQU   BPL+1      BLOCK/RECORD
000002 7418 ADEND EQU   BPR+1      TEMPORARY STCRAGE
000003 7419 RESID EQU   ADEND+1     TEMPORARY STORAGE
000004 7420 MRECC EQU   RESID+1     TEMPORARY STORAGE
000005 7421 SAVLC EQU   MRECC+1
000006 7422 SAVRB EQU   SAVLO+1
000007 7423 ANS   EQU   SAVRB+1     TEMPORARY STORAGE
7424 *
7425 *      TEMP STORE FOR SEEK COMPUTATION
7426 *
011140 011144 000000 010 7427 SKCLD ZERO  FOR0
011141 011154 000000 010 7428          ZERO  FOR1
011142 011164 000000 010 7429          ZERO  FOR2
011143 011174 000000 010 7430          ZERO  FOR3
          011144 7431 FOR0  EBSS   8
          011154 7432 FOR1  BSS   8
          011164 7433 FOR2  BSS   8
          011174 7434 FOR3  BSS   8
7435 *
7436 *      DEFINITION OF MASKS USED
011204 007777777777 000 7437 RBKMSK OCT  7777777777  RELATIVE BLOCK MASK
011205 000017777777 000 7438 .FMCRB OCT  17777777  POSITION MASK
7439 *
7440 *      REGISTERS AT ENTRY TO COMMON MASS STORE SEEK CALCULATION
7441 *
7442 *      X3 = ADDRESS OF PAT BODY
7443 *
7444 *      EXP. = FLAG FOR TYPE OF REQUEST
7445 *
7446 *      IF E = POSITIVE, AND IF LINKED FILE
7447 *      Q = NUMBER OF RECORDS MINUS ONE TO READ OR WRITE
7448 *      FOR A MULTI-RECORD REQUEST
7449 *
7450 *      IF E = NEGATIVE, AND LINKED FILE SPACING REQUEST
7451 *      Q = ZERO = NEXT RECORD OF LINKED FILE
7452 *      Q = +N = NUMBER OF RECORDS TO FORWARD SPACE
7453 *      Q = -N = NUMBER OF RECORDS TO BACKWARD SPACE
7454 *
7455 *      IF E = NEGATIVE, AND IF RANDOM FILE
7456 *      Q = M = RELATIVE BLOCK OF RANDOM FILE
7457 *
7458 *      X4 = DATA AREA OFFSET
7459 *      ODR2 = P.PAT PAT SEGMENT DESCRIPTOR
7460 *
7461 *

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ANON1980
ANON1990

EL8.
EL8.
EL8.
EL8.
EL8.
EL8.
EL8.
EL8.
EL8.
EL8.

EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7462      INHIB  ON
7463
011206 600012 7443 56 000 7464 MSCSK STX4  .SSA, ID, P.SSA      SAVE CALLERS X4      ANON1800
011207 701403 2203 12 000 7465      LDX0  .CRCT4, 2, P.CR      DDD OFFSET
011210 006131 4706 07 000 7466      LDP   PO, SD, DDD, DL
011211 011140 2242 17 010 7467      LDX4  SKCLD, 7          GET DATA POINTER      IOS02280
011212 000007 3353 10 000 7468      LCA   7, 0, PC
011213 000000 7552 14 000 7469      STA  BPL, 4
011214 000010 2353 10 000 7470      LDA  8, 0, PC
011215 000001 7552 14 000 7471      STA  BPR, 4
011216 000003 4502 14 000 7472      STZ  RESID, 4          ZERO RESIDUE IN CASE OF SPACING
011217 000007 4502 14 000 7473      STZ  ANS, 4           MAKE SURE 36 BITS CLEAR
011220 200002 2203 13 000 7474      LDX0  2, 3, P.PAT      PAT FLAGS STAY IN XO
011221 001000 3002 03 000 7475      CANX0 .FMRND, DU       TEST FOR A RANDOM FILE
011222 011237 6012 00 010 7476      TNZ  RNDOM            FILE IS RANDOM ANS, 2 IS SET
011223 000006 7562 14 000 7477      STQ  SAVRB, 4         SAVE ORIGINAL Q VALUE
011224 000007 4562 14 000 7478      STE  ANS, 4           SAVE ENTRY FLAG FOR NOW
011225 000007 2342 14 000 7479      SZN  ANS, 4           TEST FLAG FOR EP39 OR EP40
011226 011233 6052 00 010 7480      TPL  LKRW             MULTI RECORD Q=# RECORDS -1
011227 000000 0362 07 000 7481      ADLQ 0, DL           TEST FOR NEXT RECORD OR SPACING
011230 011260 6012 00 010 7482      TNZ  SPREQ           SPACING REQUEST FLAG IS SET
011231 300000 4112 03 000 7483      LDE  =0300000, DU    RESET FLAG AS MULTI
011232 000007 4562 14 000 7484      STE  ANS, 4           SAVE FOR NOW
7485 *
7486 *      LINKED FILE MULTI OR NEXT RECORD
7487 *      ANS IS SET + SAVRB = # RECORDS -1
7488 *
011233      011233 7489 LKRW  NULL
011233 000006 0542 14 000 7490      AOS  SAVRB, 4         UPDATE RECORD COUNT TO ACTUAL
011234      011234 7491 LKRW1 NULL
011234 200003 2363 13 000 7492      LDQ  3, 3, P.PAT      PICK UP REL. LOCATION WITHIN DESCRIPT
011235 011205 3762 00 010 7493      ANQ  .FMCRB           CLEAN OUT FILE SIZE
011236 011322 7102 00 010 7494      TRA  PATSCN           GO FIND IT IN PAT

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7496 *
7497 *   RANDOM FILE, Q REGISTER = RELATIVE BLOCK WITHIN FILE
7498 *   CONVERT TO LLINK # PRIOR TO PAT SCAN
7499 *   ANS =0
7500 *
011237 011237
011237 011204 3762 00 010 7501 RNDOM NULL
011240 000001 5062 14 000 7502 ANQ RBKMSK INSURE + BLOCK NUMBER
011241 000005 7552 14 000 7503 DIV BPR,4 CONVERT TO LLINK #
011242 000006 7562 14 000 7504 STA SAVLO,4 LEFTOVER SECTORS ANON2010
7505 STQ SAVRB,4 SAVE RELATIVE BLOCK ALWAYS
011243 011243
011243 011204 3762 00 010 7506 RNDOM1 NULL
011244 000200 3002 03 000 7507 ANQ RBKMSK AND OUT ODD BLOCK #
011245 011322 6002 00 010 7508 CANXO .FMFDP,DU IS FILE DESCRIPTOR REWOUND
011246 200003 2353 13 000 7509 TZE PATSCN START SCAN FOR LLINK # IN Q-REG
011247 011205 3752 00 010 7510 LDA 3,3,P,PAT SEE IF THIS LLINK # DESCR. IS IN CORE
011250 000002 7552 14 000 7511 ANA .FMCRB LLINK POSITION IN A REG
011251 000002 1362 14 000 7512 STA ADEND,4 SAVE IN TEMP STORAGE
011252 011322 6052 00 010 7513 SBLQ ADEND,4 NEW BLOCK NOW RELATIVE TO INCORE DES.
7514 TPL PATSCN DESIRED POS IS HERE OR ON FORWARD
7515 *
7516 *   NEED TO REWIND THE DESCRIPTORS
7517 *
011253 000400 3002 03 000 7518 CANXO .FMPMF,DU CANNOT REWIND A TEMP FILE
011254 011467 6012 00 010 7519 TNZ DOALL BACKSPACE PERM RANDOM FILE
7520 *
7521 *   CANNOT REWIND A TEMP FILE DENY ACCESS
7522 *
011255 000003 4502 14 000 7523 STZ RESID,4 DONT GIVE ANY RESIDUE
011256 600000 2362 03 000 7524 LDQ =0600000,DU GIVE BACK TOO FAR ERROR
011257 011461 7102 00 010 7525 TRA RTN MAKE GRACEFUL EXIT

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7527 *
7528 *   SPACING REQUEST
7529 *   XO = PAT ATTRIBUTES
7530 *   FLAG IN ANS IS NEGATIVE
7531 *   DIRECTION AND COUNT OF SPACING IN SAVRB
7532 *
011260
011260 200003 2353 13 000 7533 SPREQ NULL
011261 011205 3752 00 010 7534 LDA 3,3,P,PAT PICK UP CURRENT LOC. WITHIN DESCRIPTOR
011262 000000 0362 03 000 7535 ANA .FMCRB MASK OUT FILE SIZE
011263 011272 6042 00 010 7536 ADLQ 0,DU TEST FOR + FORWARD OR - BACK
011264 011317 6002 00 010 7537 TMI SPRQB BACK IT IS
011265 000006 0352 14 000 7538 TZE SPXIT POSITION FOUND SPACE 0
011266 000020 1152 03 000 7539 ADLA SAVRB,4 ADD IN NEW FORWARD POSITION
011267 011403 6032 00 010 7540 CMPA =020,DU TEST IF OVERFLOW INTO SIZE
011270 200003 0563 13 000 7541 TRC FORWDE TOO FAR STOP HIM NOW
011271 011234 7102 00 010 7542 ASQ 3,3,P,PAT UPDATE NEW POSITION WITHIN DESCRIPTOR
7543 TRA LKRW1 MERGE WITH LINKED FILE ENTRY
7544 *
7545 *   BACKSPACE REQUESTED SEE IF DESCR. IN CORE OR BACKSP. DESCR.
7546 *
011272
011272 000004 7552 14 000 7547 SPRQB NULL
011273 000004 0362 14 000 7548 STA MRECC,4 SAVE PRESENT POSITION IN TEMP
011274 011300 6042 00 010 7549 ADLQ MRECC,4 ADD NEG LLINKS TO GO BACK
7550 TMI SPRQB1 BACK TOO FAR TRY TO BACKSPACE DESCRIP
7551 *
7552 *   DESIRED POSITION IS IN DESCRIPTORS IN CORE UPDATE AND GO
7553 *
011275 000000 2202 03 000 7554 LDXO 0,DU SET ERROR FLAG TO O. K.
011276 000003 4502 14 000 7555 STZ RESID,4 SET TO GOOD RESIDUE
011277 011312 7102 00 010 7556 TRA SPRQFR UPDATE PAT AND RETURN
7557 *
7558 *   NEED TO BACKSPACE DESCRIPTORS
7559 *
011300
011300 000400 3002 03 000 7560 SPRQB1 NULL
011301 011306 6002 00 010 7561 CANXO .FMFMP,DU IS THIS TEMP OR PERM FILE
011302 000200 3002 03 000 7562 TZE SPRQBR TEMP FILE CANT REFRESH GIVE ERROR AND
011303 011306 6002 00 010 7563 CANXO .FMFDP,DU IS FIRST DESCR. IN CORE
7564 TZE SPRQBR YES WENT BACK TOO FAR GIVE ERROR AND
7565 *
7566 *   BACKSPACE PAT DESCRIPTORS .CALL .MFS18,2 ONLY ON SPACING
7567 *
011304
011304 000006 7562 14 000 7568 SPRQB2 NULL
011305 011467 7102 00 010 7569 STQ SAVRB,4 SAVE # LLINKS YET TO GO IN SAVRB
7570 TRA DOALL BACKUP DESCRIPTORS
7571 *
7572 *   ERROR DURING SPACING SET 3,3 TO LAST ACCESS LEGAL
7573 *
011306
011306 600000 2202 03 000 7574 SPRQBR NULL
011307 000000 5332 00 000 7575 LDXO =0600000,DU SET TOO FAR BACK FLAG
7576 NEGL MAKE REVERSE RESIDUE POSITIVE

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

011310	000003	7562	14	000	7577	STQ	RESID,4	SAVE THIS RESIDUE
011311	000000	2362	03	000	7578	LDQ	0,DU	SET FILE POSITION TO REWOUND
		011312			7579	SPRQFR	NULL	
011312	777760	2352	03	000	7580	LDA	=0777760,DU	GET MASK TO SAVE FILE SIZE
011313	200003	3553	13	000	7581	ANSA	3,3,P.PAT	WIPE OUT PRESENT LOCATION
		011314			7582	SPRQF1	NULL	
011314	200003	0563	13	000	7583	ASQ	3,3,P.PAT	UPDATE WITH LAST GOOD POSITION
011315	000000	6362	10	000	7584	EAQ	0,0	SET ERROR FLAG IN Q REG FROM XO
011316	011461	7102	00	010	7585	TRA	RTN	RETURN TO CALLER
					7586	*		
					7587	*	NORMAL SPACE EXIT AFTER PAT SCAN	
					7588	*		
		011317			7589	SPXIT	NULL	
011317	000003	4502	14	000	7590	STZ	RESID,4	ZERO RESIDUE
011320	000000	2362	03	000	7591	LDQ	0,DU	SET STATUS TO O. K.
011321	011461	7102	00	010	7592	TRA	RTN	RETURN TO CALLER

EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7594 *
7595 * PAT SCAN ROUTINE
7596 * CALLING SEQUENCE IS "TRA PATSCN "
7597 * REGISTERS -- X3 POINTS TO PAT BODY
7598 * Q-REG = LLINK # TO ACCESS
7599 * PAT BODY CONTAINS THE FOLLOWING
7600 * 3,3 IF RANDOM CONTAINS RELATIVE LLINK OF DESCR. IN FILE
7601 * 3,3 IF LINKED POSITION WITHIN CORE DESCRIPTORS
7602 * N,3 DESCRIPTORS 3 TYPES -SPACE-, -DEVICE-, LINKAGE
7603 * BIT 1 = 0 SPACE ADD FOR NEW POSITION
7604 * BIT 1 =1 TEST FOR OTHER TYPE
7605 * BITS 4,5=C1 DEVICE UPDATE SCT ADDRESS
7606 * =00 LINKAGE SET INDEX TO FIND NEXT DESCRIPTOR
7607 *
7608 *
011322 7609 PATSCN NULL
011322 200000 2213 13 000 7610 LDX1 0,3,P.PAT INITIALIZE TO ORIGINAL SCT ADDRESS
011323 017774 3612 03 000 7611 ANX1 .FSCT1,DU MASK OUT PAT TYPE
011324 000004 7412 14 000 7612 STX1 MRECC,4 SAVE SCT TYPE IN TEMP
011325 000002 7562 14 000 7613 STQ ADEND,4 SAVE RELATIVE POSITION WITHIN DESC.
011326 000004 6212 13 000 7614 EAX1 4,3 SET X1 TO FIRST DESCRIPTOR IN CORE
011327 7615 SCAN1 NULL BEGIN SCAN LOOP
011327 200000 2363 11 000 7616 LDQ 0,1,P.PAT FETCH DESCRIPTOR IN Q
011330 200000 3162 03 000 7617 CANQ .FMSPD,DU WHAT KIND IS IT
011331 011344 6012 00 010 7618 TNZ SCAN3 NOT SPACE DESCR. TRY OTHERS
011332 077777 3762 03 000 7619 ANQ .FMLLD,DU DROP ALL BUT # LLINKS IN THIS DESC.
011333 000022 7322 00 000 7620 QRS 18 POSITION IN Q LOWER
011334 000000 5332 00 000 7621 NEGL NEGATE THIS NUMBER
011335 000002 0362 14 000 7622 ADLQ ADEND,4 ADD TO POSITION DESIRED
011336 011357 6042 00 010 7623 TMI FNDSC GUESS SPACE CONTAINED IN THIS DESC.
011337 000002 7562 14 000 7624 STQ ADEND,4 DID NOT FIND IT SAVE NEW VALUE TO GO
011340 200000 2353 11 000 7625 LDA 0,1,P.PAT HEY WAS THIS THE LAST DESC. IN CORE
011341 011374 6052 00 010 7626 TPL FORWD YES IT WAS TRY TO REFRESH FORWARD
011342 7627 SCAN2 NULL
011342 000001 6212 11 000 7628 EAX1 1,1 BUMP X1 TO NEXT DESCRIPTOR
011343 011327 7102 00 010 7629 TRA SCAN1 FETCH NEXT
7630 *
7631 * DESCRIPTOR NOT SPACE? WHICH IS IT, DEVICE OR LINKAGE
7632 *
011344 7633 SCAN3 NULL
011344 000000 6352 02 000 7634 EAA 0,QU GET UPPER DESCRIPTOR IN A-UPPER
011345 240000 1152 03 000 7635 CMPA =024000,DU SEE IF DEVICE DESCR.
011346 011353 6002 00 010 7636 TZE SCAN4 YES GO GET SCT
7637 *
7638 * HAS TO BE LINKAGE AS THATS ALL THAT IS LEFT
7639 *
011347 200000 1152 03 000 7640 CMPA =020000,DU SEE IF LINKAGE DESCR.
011350 011413 6012 00 010 7641 TNZ BDPAT GIVE ERROR PAT CLOBBBERED
011351 200000 7213 11 000 7642 LXL1 0,1,P.PAT SET NEW X1 PCINTER
011352 011327 7102 00 010 7643 TRA SCAN1 FIND NEXT DESCRIPTOR

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7644 *
7645 *   FOUND A DEVICE DESCRIPTOR, UPDATE SCT AND CONTINUE SCAN
7646 *
011353
011353 000000 6352 06 000 7647 SCAN4 NULL
011354 017774 3752 03 000 7648     EAA     0,QL     MOVE DEVICE SCT ADDRESS INTO A UPPER
011355 000004 7552 14 000 7649     ANA     .FSCT1,DU  MAKE SURE NO EXTRANEIOUS JUNK IS HERE
011356 011342 7102 00 010 7650     STA     MRECC,4  SAVE THIS SCT ADDRESS AND CONTINUE
7651     TRA     SCAN2  BUMP X1 AND CONTINUE
7652 *
7653 *   FOUND LOCATION IN DESCRIPTORS
7654 *   X1 POINTS TO THAT DESCRIPTOR
7655 *   Q-REG CONTAINS NEG # LLINKS LEFT IN DESCRIPTOR
7656 *   MRECC CONTAINS THE SCT ADDRESS FOR THE SPACE
7657 *   ADEND CONTAINS # LLINKS FROM THE START OF THIS DESCRIPTOR
7658 *
011357
011357 000007 2342 14 000 7659 FNDESC NULL
011360 011317 6042 00 010 7660     SZN     ANS,4     WHAT TYPE OPERATION WE DOING
011361 200000 2353 11 000 7661     TMI     SPXIT    SPACING OP GO TO SPACE EXIT
011362 100000 3152 03 000 7662     LDA     0,1,P,PAT  FETCH ENTIRE DESCRIPTOR IN A REG
011363 011415 6002 00 010 7663     CANA    .FMRLS,DU  WAS THIS SPACE DEFECTIVE
011364 400000 3002 03 000 7664     TZE     FOUND1    NO IT IS GOOD SPACE
011365 011370 6002 00 010 7665     CANXD   .FMFPF,DU  IS PROTECTED FILE
011366 000002 2602 03 000 7666     TZE     NOPROT    NO SEE IF PERM
011367 200002 7403 13 000 7667     ORXD   .FMILP,DU  SET ILL PRM FLAG FOR FILSYS
7668     STXD   2,3,P,PAT  INSERT ILL PERMS FLAG
011370 000400 3002 03 000 7669 NOPROT NULL
011371 011415 6012 00 010 7670     CANXD   .FMPMF,DU  BAD SPACE, WILL ALLOW ACCESS IF PERM
7671     TNZ     FOUND1    IT WAS A PERM FILE LET HIM HAVE IT
7672 *
7673 *   ACCESS TO TEMP FILE AFTER W OPTION, SOCK IT TO HIM
7674 *
011372 440000 2362 03 000 7675     LDQ     =0440000,DU  REPORT THE BAD NEWS GEPR OPTION NOT V
011373 011461 7102 00 010 7676     TRA     RTN       LEAVE HERE WITH ERROR LOADED
7677 *
7678 *   REFRESH FORWARD ALL TYPES OF OPERATIONS
7679 *   IF RANDOM FILE SAVRB CONTAINS RELATIVE BLOCK # IN FILE
7680 *   IF LINKED Q REG = # LLINKS TO GO
7681 *
011374
011374 000400 3002 03 000 7682 FORWD NULL
011375 011403 6002 00 010 7683     CANXD   .FMPMF,DU  IS IT A PERM FILE
011376 002000 3002 03 000 7684     TZE     FORWDE    NO TEMP CANT DO IT TO IT
011377 011403 6002 00 010 7685     CANXD   .FMLDP,DU  IS LAST SET OF DESCRIPTORS IN CORE
7686     TZE     FORWDE    YES THEY ARE FILE SPACE EXHAUSTED PHE
7687 *
7688 *   FORWARD SPACE POSSIBLE
7689 *
011400 000007 2342 14 000 7690     SZN     ANS,4     WHAT TYPE OF OPERATION
011401 011304 6042 00 010 7691     TMI     SPRQB2    SPACING SAVE BLOCKS TO BRING IN Q
011402 011467 7102 00 010 7692     TRA     DOALL     LINKED OR RANDOM QREG HAS OFFSET
7693 *

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

7694 * FOUND REASON WHY FORWARD SPACE IMPOSSIBLE

7695 *

0114C3

011403	500000	2202	03	000	7696	FORWDE	NULL			
011404	000007	2342	14	000	7697		LDX0	=0500000,DU	SET TOO FAR FORWARD FLAG ON	
011405	011410	6042	00	010	7698		SZN	ANS,4	WHAT TYPE OF OPERATION	
011406	000000	6362	10	000	7699		TMI	FORWDS	SPACING IT WAS DO MY THING	
011407	011461	7102	00	010	7700		EAQ	0,0	ERROR FLAGS IN Q	
011410	000003	7562	14	000	7701		TRA	RTN	LETS LEAVE WITH ERROR	
011411	000000	5332	00	000	7702	FORWDS	STQ	RESID,4	TELL USER HOW MUCH TOO FAR HE WENT	
011412	011314	7102	00	010	7703		NEGL		NEGATE RESIDUE TO UPDATE PAT	
					7704		TRA	SPRQF1	DO IT TO IT	
					7705	*				
					7706	*		FOUND A BAD PAT IN USERS SSA		
					7707	*				
					7708	BDPAT	NULL			
011413	470000	2362	03	000	7709		LDQ	=0470000,DU	SET ERROR FLAG FOR BAD PAT	
011414	011461	7102	00	010	7710		TRA	RTN	EXIT WITH ERROR	

EP # 23 COMMON MASS STORAGE SEEK CALCULATION

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7712 *
7713 * FOUND THE DESIRED SPACE WITHIN GIVEN SET OF DESCRIPTORS
7714 * WILL NOW CALCULATE THE SEEK ADDRESS FOR THIS SPACE
7715 *
011415
011415 000000 5332 00 000 7716 FOUND1 NULL
011416 001000 3002 03 000 7717 NEGL MAKE REMAINING # LLINKS POSITIVE
011417 011427 6012 00 010 7718 CANX0 .FMRND,DU IS THIS A RANDOM FILE
011420 200003 2353 13 000 7719 TNZ FOUND2 YES DONT UPDATE THE NEW REL. LLINK #
011421 011205 3752 00 010 7720 LDA 3,3,P.PAT LINKED UPDATE CURRENT LLINK
011422 000006 0352 14 000 7721 ANA .FMCRB WIPE OUT SIZE
011423 000020 1152 03 000 7722 ADLA SAVRB,4 UPDATE # RECORDS
011424 011403 6032 00 010 7723 CMPA =02C,DU DID IT OVERFLOW INTO SIZE
011425 000006 2352 14 000 7724 TRC FORWDE YES BOMB OUT DONT LET HIM DO IT
011426 200003 0553 13 000 7725 LDA SAVRB,4 O.K. TO UPDATE
7726 ASA 3,3,P.PAT IN WITH THE NEW
7727 *
7728 * MERGE WITH RANDOM 3,3,P.PAT UPDATED FOR LINKED FILE
7729 *
011427
011427 000001 4022 14 000 7730 FOUND2 NULL
011430 000003 7562 14 000 7731 MPY BPR,4 FIND THE NUMBER OF BLOCK/RECORD
011431 701403 2203 12 000 7732 STQ RESID,4 SAVE HERE FOR TIME BEING
011432 200000 2363 11 000 7733 LDX0 .CRCT4,2,P.CR GET DDD OFFSET AGAIN IOS02440
011433 777777 3762 07 000 7734 LDQ 0,1,P.PAT PICK UP THIS SPACE DESCRIPTOR
011434 000002 0362 14 000 7735 ANQ .FMBLK,DL STARTING LLINK LOCATION
011435 000001 4022 14 000 7736 ADLQ ADEND,4 ADD # LLINKS IN DESCRIPTOR
011436 000003 2352 14 000 7737 MPY BPR,4 CONVERT TO BLOCKS
011437 000007 2342 14 000 7738 LDA RESID,4 GET BLOCK COUNT LIMIT 14FW1450
011440 011445 6012 00 010 7739 SZN ANS,4 WAS THIS A RANDOM FILE
011441 000002 7562 14 000 7740 TNZ FOUND3 LINKED (BLOCK IS 0 MOD RECD.SIZE)
011442 000005 0362 14 000 7741 STQ ADEND,4 SAVE BLOCK AT BEGINNING OF LLINKS
011443 000005 1352 14 000 7742 ADLQ SAVLO,4 PLUS ODD BLOCKS ANON2030
011444 000003 7552 14 000 7743 SBLA SAVLO,4 LESS ODD BLOCKS ANON2050
7744 STA RESID,4 ANON2060
7745 *
7746 * HAVE BLOCK # FOR SEEK IN Q REG, WILL NOW GO TO EP -4 OF
7747 * APPROPRIATE CHANNEL MODULE FOR A SEEK CALCULATION
7748 *
011445
011445 000004 4707 10 000 7749 FOUND3 NULL
011446 000002 7432 14 000 7750 LDP PO,4,0,PO GET BNLNK PTR IOS02300
011447 000004 2232 14 000 7751 STX3 ADEND,4 SAVE X3 SO WE CAN POINT TO SCT FOUND
011450 000000 7013 00 000 7752 LDX3 MRECC,4 POINT TO LAST SCT FOUND
011451 000000 0112 00 000 7753 TSX1 0,,PO CALL CHANNEL MODULE IOS02320
011452 000002 2232 14 000 7754 NOP ERROR STATUS IS IN QU IOS02330
7755 LDX3 ADEND,4 RESTORE USERS X3
7756 *
7757 * SEEK ADDRESS HAS BEEN CHECKED, OPEN GATE
7758 * RESTORE USERS REGISTERS, PUT NEW SCT ADDRESS IN X0 AND GO
7759 *
011453
011453 000003 2352 14 000 7760 FOUND4 NULL
7761 LDA RESID,4 SAVE RESIDUE

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EP # 23 COMMON MASS STORAGE SEEK CALCULATION

	011454	7762	SEKRET	NULL				
011454	000004	2202 14	000	7763	LDX0	MRECC,4	SCT ADDRESS	IOS02360
011455	600012	2243 54	000	7764	LDX4	.SSA,DI,P.SSA	RESTORE CALLERS X4	ANON1820
011456	400000	3162 03	000	7765	CANQ	.FBTO,DU	TEST ERROR	IOS02380
011457	000001	6002 15	000	7766	TZE	1,5	NO	IOS02390
011460	000000	7102 15	000	7767	TRA	0,5	YES	IOS02400

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					7769 *				
					7770 *	RETURN NOT NORMAL BUT GATE SHUT, DO NOT PASS BACK SCT			
					7771 *				
				011461	7772 RTN	NULL			
011461	000004	4502	14	000	7773	STZ	MRECC,4	ZERO SCT POINTER	
011462	011453	7102	00	010	7774	TRA	FOUND4	TAKE EXIT	
					7775 *				
					7776 *	PAT FAILED FROM .MFS18,N CALL GATE IS OPEN			
					7777 *				
				011463	7778 NOTS1	NULL			
011463	000000	6222	05	000	7779	EAX2	0,AL	RESET INDEX 2	
011464	000000	6212	01	000	7780	EAX1	0,AU	RESET X1 RETURN	
011465	420000	2362	03	000	7781	LDQ	=0420C00,DU	SET PAT FAILED FLAG	
011466	011454	7102	00	010	7782	TRA	SEKRET	TAKE USER ERROR EXIT	
					7783 *				
					7784 *	COMMON ROUTINE TO PACK REGISTERS OPEN GATE IN CALLING			
					7785 *	CHANNEL MODULE. EXPONENT REGISTER WILL NOT BE USED			
					7786 *	IN .MFS18. RETURN FROM .MFS18 XO WILL CONTAIN STATUS			
					7787 *	IF XO NON ZERO BAD STATUS WILL SET ERROR CODE AND			
					7788 *	TAKE 0,1 EXIT. GOOD STATUS WILL RESTORE REGISTERS			
					7789 *	AND CONTINUE SEEK CALCULATION			
					7790 *				
				011467	7791 DOALL	NULL			
011467	000006	2362	14	000	7792	LDQ	SAVRB,4		ANON1660
011470	000000	2352	14	000	7793	LDA	BPL,4		11FW1080
011471	000022	7352	00	000	7794	ALS	18		11FW1090
011472	000001	2752	14	000	7795	ORA	BPR,4		11FW1100
011473	600012	7553	56	000	7796	STA	.SSA,DI,P.SSA	SAVE BPL & BPR	11FW1110
011474	600221	2353	00	000	7797	LDA	.SVFLT,,P.SSA		ANON1680
011475	600012	7553	56	000	7798	STA	.SSA,DI,P.SSA	& ENTRY MODE	ANON1690
011476	000007	4112	14	000	7799	LDE	ANS,4	HOLD PARAMETERS	ANON1700
011477	000005	2352	14	000	7800	LDA	SAVLO,4	HOLD RESIDUE	EL8.
					7801				ANON1720
				011500	7802	.CALLY	.MFS18,1	CALL PAT REFRESH	ANON1730
						INHIB	SAVE,ON		
011500	600220	7403	00	000		STXO	.STMPX,,P.SSA		
						ICLIMB	SD.SVY,,.MFS18*64+1,EAXO		
011501	011101713400			000		VFD	18/.MFS18*64+1,09/713,1/1,1/0,1/0,6/M.		
011502	000000606123			000		VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVY		
						INHIB	RESTORE		
					7803				ANON1740
011503	000005	7552	14	000	7804	STA	SAVLO,4	SAVE RESIDUE	EL8.
011504	600012	2353	54	000	7805	LDA	.SSA,DI,P.SSA		ANON1760
011505	600221	7553	00	000	7806	STA	.SVFLT,,P.SSA		ANON1770
011506	600012	2353	54	000	7807	LDA	.SSA,DI,P.SSA	RETRIEVE BPL & BPR	11FW1150
011507	000000	6212	05	000	7808	EAX1	0,AL		11FW1160
011510	000001	4412	14	000	7809	SXL1	BPR,4		11FW1170
011511	000022	7312	00	000	7810	ARS	18		11FW1180
011512	000000	7552	14	000	7811	STA	BPL,4		11FW1190
011513	000000	6202	10	000	7812	EAXO	0,0	TEST FOR ERROR FROM FS18	

EP # 23 COMMON MASS STORAGE SEEK CALCULATION

011514	011463	6012	00	010	7813	TNZ	NOTS1	UNSUCCESSFUL GIVE ERROR EXIT
011515	000007	4502	14	000	7814	STZ	ANS,4	ZERO 36 BITS IN CASE USERD
011516	000007	4562	14	000	7815	STE	ANS,4	SAVE OPERATION FLAG
011517	000006	7562	14	000	7816	STQ	SAVRB,4	SAVE USERS SEEK INPUT
011520	200002	2203	13	000	7817	LDXO	2,3,P,PAT	GET PAT ATTRIBUTES BLOCK BACK IN XO
011521	000007	2342	14	000	7818	SZN	ANS,4	TEST POERATION TYPE
011522	011243	6002	00	010	7819	TZE	RNDOM1	RANDOM
011523	011260	6042	00	010	7820	TMI	SPREQ	LINKED SPACING
011524	011234	7102	00	010	7821	TRA	LKRW1	LINKED READ OR WRITE
					7822	INHIB	OFF	

EP#24 END OF FILE PRCESSING FOR MASS STORAGE

	7824 *				
	7825 *	REGISTER CONVENTION			
	7826 *				
	7827 *	QR= # OF BLOCKS XMITTED			
	7828 *				
	7829 *				
	7830 *	X2= LOGICAL PRIMARY DDDNEL INDEX			
	7831 *	X3= I/O ENTRY OFFSET			
	7832 *	X5= OFFSET TO DDD SEG.			
	7833 *	X6= KPX			
	7834 *	X7= PROCESSOR#			
	7835 *				
	7836 *	ODR1 P.IOQ TYPE-0			
	7837 *	ODR2 P.DDD			
	7838 *	ODR3 P.PAT			
	7839 *	ODR4 P.DATA			
	7840 *	ODR6 P.SSA			
	7841 *	ODR7 P.CR			
	7842 *				
	7843 *				
0000C4	7844	P.DATA SET	P4		
0000C3	7845	P.PAT SET	P3		
0000C2	7846	P.DDD SET	P2		
	7847 *				
	7848 *				
	7849 *				
000010	7850	BPRP EQU	8	BLOCKS PER RECORD E.P. IN DDD MOD	
0000C6	7851	WPBP EQU	6	WORDS PER BLOCK E.P. IN CHAN MOD.	
020000	7852	TDCW BOOL	20000	TRANSFER DCW ACTION CODE	
007777	7853	WDCT BOOL	7777	MASK TO ISOLATE WORD COUNT IN DCW	
	7854 *				
	7855 *				
	7856 *				
	7857 *				
	7858 *				
	7859 *				
	7860 *				
	7861	MSEOF NULL			
011525	7862	EAX4	0,3	X4 HAS A I/O ENTRY OFFSET	
011525 000000 6240 13 000	7863 *				
	7864 *				
	7865 *	*FIND FILE ACCESS TYPE RANDOM-LINKED	SYOT END OF CYLINDER		
	7866 *		OR LINKED BLOCK COUNT LIMIT		
	7867 *				
011526 006131 4724 07 000	7868	LDP	P2,SD,DDD,DL		
011527 701403 2251 12 000	7869	LDX5	.CRCT4,2,P.CR		
011530 000000 6200 00 000	7870	EAX0	0	ASSUME SYOT	
011531 100013 0561 14 000	7871	ASQ	.WEIOS,4,P.IOQ	UPDATE REL.BLK# IF RANDOM OR SYOT	
011532 100004 7231 14 000	7872	LXL3	.WESCT,4,P.IOQ		
011533 000020 3030 03 000	7873	CANX3	.FSYOT,DU	IS IT SYOT	

EP#24 END OF FILE PROCESSING FOR MASS STORAGE

011534	011613	6010	00	010	7874	TNZ	EOF5	YES, NO PAT FOR HIM	
011535	100005	2201	14	000	7875	LDX0	.WEPEP,4,P.I0Q		IOS04460
011536	006204	4704	07	000	7876	LDP	PO,SD,PSH,DL		
011537	000002	6735	00	000	7877	LDD	P.PAT,PH.PAT,,PO	PO HAS PAT SEG. DESC	
011540	300000	2231	10	000	7878	LDX3	0,0,P.PAT	GET PAT BODY OFFSET	IOS04470
011541	037777	3630	03	000	7879	ANX3	.FPTOF,DU	UNMASK IT	IOS04475
011542	037777	1030	03	000	7880	CMPX3	.FADJ,DU	IS IT ADJACENT	IOS04480
011543	000002	6010	04	000	7881	TNZ	2,IC	NO	IOS04485
011544	000003	6230	10	000	7882	EAX3	.OFFS,0	YES, SET PTR	IOS04490
011545	777777	6200	00	000	7883	EAX0	-1	SET RANDOM FLAG	IOS04495
011546	100000	7431	14	000	7884	STX3	.WEST,4,P.I0Q	SAVE PAT OFFSET	
011547	300002	2231	13	000	7885	LDX3	2,3,P.PAT	GET ATTRIBUTE IN X3	
011550	001000	3030	03	000	7886	CANX3	.FMRND,DL	IS IT RANDUM FILE	
011551	011613	6010	00	010	7887	TNZ	EOF5	YES	
					7888	*			
					7889	*	LINKED FILE TEST EOF TYPE AND SET X0 ACCORDING		
					7890	*			
011552	000002	6200	00	000	7891	EAX0	2	SET FOR BLOCK CNT EXHAUSTED	
011553	100010	2351	14	000	7892	LDA	.WEEP1,4,P.I0Q	LOAD SRWD#1	
011554	000012	7350	00	000	7893	ALS	10	TEST STATUS- BLOCK COUNT LIMIT	
011555	011557	6040	00	010	7894	TMI	*+2	YES	
011556	000001	6200	00	000	7895	EAX0	1	MUST BE END OF CYLINDER	
011557	100025	7561	14	000	7896	STQ	.WEEND+1,4,P.I0Q	SAVE Q-REG--BLOCKS XMITTED	
					7897	*		SET E.P. # OF BLOCK PER RECORD	
011560	200010	5061	15	000	7898	DIV	BPRF,5,P2	# OF RECORDS IN Q-REG BLOCK RESID	
					7899	*		IN A-REG	
011561	100013	4501	14	000	7900	STZ	.WEIOS,4,P.I0Q	CLEAR .WEIOS	
011562	000030	7350	00	000	7901	ALS	24	POSITION BLOCK RESIDUE IN A-REG	
011563	011571	6000	00	010	7902	TZE	EOF3	NO BLOCK RESIDUE-NO PROBLEM	
					7903	*			
					7904	*	FOUND END OF FILE NOT ON RECORD BOUNDARY		
					7905	*			
011564	000002	1000	03	000	7906	CMPX0	2,DU	WAS IT BLOCK COUNT LIMIT	
011565	011570	6010	00	010	7907	TNZ	EOF2	NO, END OF CYLINDER	
					7908	*			
					7909	*	BLOCK COUNT LIMIT BUMP XMITTED BY ONE		
					7910	*			
011566	000001	0360	07	000	7911	ADLQ	1,DL	REC = REC+1	
011567	011571	7100	00	010	7912	TRA	EOF3	RECORD XMITTED IN Q-REG	
					7913	*			
					7914	EOF2	NULL		
011570	100013	7551	14	000	7915	STA	.WEIOS,4,P.I0Q	ODD BLOCKS IN C-11 IN .WEIOS	
					7916	*			
					7917	*	LINKED FILE	QR = # RECORDS XMITTED	
					7918	*		CMD +1 = # RECORDS REQUESTED	
					7919	*		CMD+1 - QR = # OF RECORD LEFT TO XMIT	
					7920	*			
					7921	EOF3	NULL		
011571	100006	7561	14	000	7922	STQ	.WEICM,4,P.I0Q	RECORDS XMITTED IN .WEICM	
011572	100011	2361	14	000	7923	LDQ	.WEFCM,4,P.I0Q	LOAD CMD	

EP#24 END OF FILE PROCESSING FOR MASS STORAGE

011573	007700	3760	07	000	7924	ANQ	=0770C,DL	ISOLATE RECORD COUNT
011574	100011	6561	14	000	7925	ERSQ	.WEFCM,4,P.IOQ	RESET RECORD COUNT TO ZERO
011575	000006	7720	00	000	7926	QRL	6	RIGHT JUSTIFY RECORD COUNT
011576	000001	0360	07	000	7927	ADLQ	1,DL	NOW HAVE # RECORDS REQUESTED
011577	100006	1361	14	000	7928	SBLQ	.WEICM,4,P.IOQ	QR HAS RECORDS LEFT TO XMIT
011600	012043	6040	00	010	7929	TMI	EOF24	ALL DONE
011601	011612	6000	00	010	7930	TZE	EOF4	MAYBE ODD BLOCK CASE
					7931 *			
					7932 *			
					7933 *			
								SET RECORD COUNT TO RESIDUE -1. - DECREMENT DAT POSITION
011602	100013	0561	14	000	7934	ASQ	.WEIOS,4,P.IOQ	RECORD RESIDUE
011603	000000	5330	00	000	7935	NEGL		MAKE RESIDUE NEGATIVE
011604	100000	2231	14	000	7936	LDX3	.WEST,4,P.IOQ	GET PAT OFFSET IN X3
011605	300003	0561	13	000	7937	ASQ	3,3,P.PAT	BACK UP PAT POSITION
011606	000000	5330	00	000	7938	NEGL		MAKE RESIDUE POSITIVE
011607	000001	1360	07	000	7939	SBLQ	1,DL	GET RIGHT COMMAND RESIDUE
011610	000006	7360	00	000	7940	QLS	6	POSITION FOR COMMAND
011611	100011	2561	14	000	7941	ORSQ	.WEFCM,4,P.IOQ	PUT BACK INTO COMMAND
					011612			
011612	100025	2361	14	000	7942	NULL	EOF4	
					7943	LDQ	.WEEND+1,4,P.IOQ	BLCKS XMITTED IN QR
					7944 *			
					7945 *			
					011613			
011613	100006	7401	14	000	7946	NULL	EOF5	
					7947	STXO	.WEICM,4,P.IOQ	SAVE FILE ACCESS TYPE
					7948 *			
					7949 *			
					7950 *			TEST THE DCW TYPE SUCH LIKE AUX-DCW / NO DCW / DCW IN I/O ENTRY
					7951 *			THEN, DCW SCAN TC CONTINUE I/O ACCORDING TO ABOVE DCWS
					7952 *			
					7953 *			
					011614			
					7954	NULL	EOF6	
					7955 *			CONVERT # BLOCKS TO # WORDS ,QR = # BLOCKS
					7956 *			
011614	200006	4021	15	000	7957	MPY	WPBP,5,P2	HAS WORDS PER BLOCK Q = # WORDS
011615	000000	5330	00	000	7958	NEGL		MAKE # OF WORD NEGATIVE
011616	100024	7561	14	000	7959	STQ	.WEEND,4,P.IOQ	SAVE WORD COUNTER
011617	006013	4704	07	000	7960	LDP	PO,SD,IOQ,DL	LOAD TYPE1 DESC. IN PO
011620	100001	7201	14	000	7961	LXLO	.WEPRV,4,P.IOQ	CHECK THE DATA SEG. TYPE FOR DCW
011621	004000	3000	03	000	7962	CANXO	.FFAUX,DU	IS AUX SPECIFIED
011622	011673	6010	00	010	7963	TNZ	EOF4U	YES
011623	040000	3000	03	000	7964	CANXO	.FFDCW,DU	IS NO-DCW SPECIFIED
011624	011671	6010	00	010	7965	TNZ	EOFNO	YES
011625	000020	6210	14	000	7966	EAX1	.WEDRF,4	
011626	100006	4411	14	000	7967	SXL1	.WEICM,4,P.IOQ	SET 1ST DCW POINTER
011627	100004	7201	14	000	7968	LXLO	.WESCT,4,P.IOQ	
011630	000040	3000	03	000	7969	CANXO	.FDSSA,DU	IS EOF-DCW ALREADY GENERATED
011631	011676	6010	00	010	7970	TNZ	EOF7	YES
011632	000016	6745	14	000	7971	LDD	P.DATA,.WEDRI,4,PO	LOAD DATA DESC IN P.DATA
					7972 *			
					011633			
					7973	NULL	EOF8	

EP#24 END OF FILE PROCESSING FOR MASS STORAGE

011633	100007	2231	14	000	7974	LDX3	.WEOFF,4,P.I0Q	
011634	400000	2351	13	000	7975	LDA	0,3,P.DATA	GET DCW
011635	000001	0230	03	000	7976	ADLX3	1,DU	BUMP POINTER TO NEXT DCW
011636	030001	3360	07	000	7977	LCQ	=0030001,DL	ACTION CODE IN DCW IS MASKED
					7978	*		(MASK 77777747777)
011637	020000	2110	07	000	7979	CMK	TDCW,DL	IS IT TDCW
011640	011646	6010	00	010	7980	TNZ	EOF9	NO, MUST BE DATA DCW
					7981	*		
					7982	*		
					7983	*	FOUND TDCW, NEED TO RESET X3 FOR NEXT DCW	
					7984	*		
011641	000040	3000	03	000	7985	CANX0	.FDSSA,DU	IS EOF-DCW ALREADY GENERATED
011642	011644	6000	00	010	7986	TZE	*+2	NO
011643	000016	6745	14	000	7987	LDD	P.DATA,.WEDRI,4,PO LOAD	DATA DES.WITH DCW
011644	000000	6230	01	000	7988	EAX3	0,AU	GET ADDR OF NEXT DCW
011645	011634	7100	00	010	7989	TRA	EOF8+1	GO TO FIND NEXT DCW
					7990	*		
					7991	*	FOUND DATA DCW, ADD # WORDS TO .WEEND IN I/O ENTRY	
					7992	*		
					7993	EOF9	NULL	
	011646				7994	ANA	WDCT,DL	ISOLATE #WORDS THIS DCW
011646	007777	3750	07	000	7994	ANA	WDCT,DL	ISOLATE #WORDS THIS DCW
011647	011651	6010	00	010	7995	TNZ	*+2	NOT 4096W
011650	010000	2350	07	000	7996	LDA	=0100C0,DL	4096W, SET # OF WORDS IN A-REG
011651	100024	0551	14	000	7997	ASA	.WEEND,4,P.I0Q	UPDATE COUNT TO .WEEND
011652	011654	6000	00	010	7998	TZE	EOF10	DCW EXHAUSTED EXACT SEE IF IOTD
011653	011703	6050	00	010	7999	TPL	EOF14	
					8000	*		
					8001	*	STILL MAY HAVE MORE TO GO TEST FOR IOTD	
					8002	*		
					8003	EOF10	NULL	
	011654				8004	LDA	-1,3,P.DATA	WAS IT AN IOTD
011654	477777	2351	13	000	8004	LDA	-1,3,P.DATA	WAS IT AN IOTD
011655	030000	3150	07	000	8005	CANA	=0300C0,DL	ISOLATE IOTD ACTION CODE
011656	012043	6000	00	010	8006	TZE	EOF24	YES, IT WAS RETURN OK STATUS
					8007	*		
					8008	*	IT WAS NOT IOTD MAY BE MORE TO GO	
					8009	*		
011657	100024	2341	14	000	8010	SZN	.WEEND,4,P.I0Q	SEE IF ZERO CASE
011660	011634	6010	00	010	8011	TNZ	EOF8+1	NO GET NEXT DCW
					8012	*		
					8013	*	FOUND DCW WHERE DCW INTERRUPTED	
					8014	*	# WORDS THIS DCW IN AR	
					8015	*	# WORDS XMITTED FROM THIS DCW IN .WEEND	
					8016	*	BUILD A NEW DCW AND A TDCW TO NEXT IN STRING	
					8017	*		
					8018	*	DCW EXHAUSTED EXACTLY, USE USERS NEXT DCW	
					8019	*		
					8020	EOF11	NULL	
	011661				8021	LDA	0,3,P.DATA	GET THIS DCW
011661	400000	2351	13	000	8021	LDA	0,3,P.DATA	GET THIS DCW
011662	020000	2110	07	000	8022	CMK	TDCW,DL	SEE IF TDCW, QR HAS MASK
011663	011700	6010	00	010	8023	TNZ	EOF12	NOT TDCW USE NEXT DCW

EP#24 END OF FILE PROCESSING FOR MASS STORAGE

011664	000040	3000	03	000	8024	CANXO	.FDSSA,DU	IS EOF-DCW ALREADY GENERATED
011665	011667	6000	00	010	8025	TZE	++2	NO
011666	000016	6745	14	000	8026	LDD	P.DATA,,WEDRI,4,PO	LOAD DATA DESC.
					8027	*		
011667	000000	6230	01	000	8028	EAX3	0,AU	GET NEXT DCW ADDR
					8029	*		
011670	011661	7100	00	010	8030	TRA	EOF11	
					8031	*		
					011671	8032	EOFNO	NULL DATA DESCRIPTOR SHOULD BE IN DCW BUFFER
011671	100007	2211	14	000	8033	LDX1	.WEOFF,4,P.IOQ	
011672	100006	4411	14	000	8034	SXL1	.WEICM,4,P.IOQ	
					011673	8035	EOFAU	NULL
011673	006204	4704	07	000	8036	LDP	PO,SD,PSH,DL	
011674	000034	6745	00	000	8037	LDD	P.DATA,PH.DCW,,PO	LOAD DCW DESC IN P.DATA
011675	011633	7100	00	010	8038	TRA	EOF8	GO TO CHECK DCW
					8039	*		
					011676	8040	EOF7	NULL 1ST DCW OFFSET SHOULD BE A RELATIVE TO I/O ENTRY POOL
011676	100000	6345	00	000	8041	EPPR	P.DATA,0,,P.IOQ	LOAD P.IOQ DESC. AS A DATA DESC.
011677	011633	7100	00	010	8042	TRA	EOF8	GO TO CHECK DCW
					8043	*		
					8044	*		
					8045	*		
					011700	8046	EOF12	NULL
011700	100024	7551	14	000	8047	STA	.WEEND,4,P.IOQ	WE WILL USE THIS ONE
011701	000001	0230	03	000	8048	ADLX3	1,DU	BUMP PTR TO NEXT DCW
011702	011712	7100	00	010	8049	TRA	EOF13	MERGE TO BUILD TDCW
					8050	*		
					8051	*		BUILD A DCW TO FINISH OUT USERS LAST DCW
					8052	*		
					011703	8053	EOF14	NULL
011703	100024	1351	14	000	8054	SBLA	.WEEND,4,P.IOQ	GET # OF WORDS THIS DCW
011704	000022	7350	00	000	8055	ALS	18	POSITION DCW ADDRESS IN A-UPPER
011705	477777	0351	13	000	8056	ADLA	-1,3,P.DATA	HAVE ADDR FOR NEXT WORD IN A-REG
011706	007777	2360	07	000	8057	LDQ	=07777,DL	LOOK OUT FOR 4096
011707	100024	3561	14	000	8058	ANSQ	.WEEND,4,P.IOQ	IT HAS WORDS LEFT TO XMIT THIS DC
011710	002165	3750	04	14075	8059	ANA	=0777777770000,\$	ZERO WORD COUNT IN A-REG
011711	100024	2551	14	000	8060	ORSA	.WEEND,4,P.IOQ	NEW DCW NOW IN .WEEND
					8061	*		
					011712	8062	EOF13	NULL
011712	100001	7201	14	000	8063	LXLO	.WEPRV,4,P.IOQ	DEBUG
011713	040000	3000	03	000	8064	CANXO	.FFDCW,DU	
011714	011735	6010	00	010	8065	TNZ	EOF15	
011715	004000	3000	03	000	8066	CANXO	.FFAUX,DU	IS AUX SPECIFIED
011716	011722	6000	00	010	8067	TZE	++4	NO
011717	777777	0230	03	000	8068	ADLX3	-1,DU	ADJUST POINTER
011720	100006	4431	14	000	8069	SXL3	.WEICM,4,P.IOQ	SAVE DCW POINTER
011721	011735	7100	00	010	8070	TRA	EOF15	
					8071	*		
					8072	*		BUILD TDCW FOR NEXT IN LIST
					8073	*		

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011722	770000	3150	07	000	8074	CANA	=0770000,DL	TEST IOTD	EL8.
011723	011735	6000	00	010	8075	TZE	EOF15	YES	EL8.
011724	600204	0545	00	000	8076	STD	P.DATA,,STEMP,,P.SSA	STORE SEG BOUND	EL8.
011725	600204	1031	00	000	8077	CMPX3	.STEMP,,P.SSA	IS INDEX VALID	EL8.
011726	012035	6054	00	010	8078	TPNZ	EOF22	NO, RETURN ECF	EL8.
011727	400000	2351	13	000	8079	LDA	0,3,P.DATA	FETCH NEXT DCW	
011730	030001	3360	07	000	8080	LCQ	=030001,DL	FOUND OUT ACTION CODE (7777777477	
011731	020000	2110	07	000	8081	CMK	TDCW,DL	IS IT A TDCW	
011732	011735	6000	00	010	8082	TZE	EOF15	YES,USE IT INSTEAD OF BUILDING ON	
011733	000000	6350	13	000	8083	EAA	0,3	ADDR FOR TDCW IN A-UPPER	
011734	020000	2750	07	000	8084	ORA	TDCW,DL	SET TDCW ACTION CODE	
					8085	*			
					8086	*	HAVE DCW PAIR IN DCW BUFFER OR I/O ENTRY AND AR		
					8087	*			
	011735				8088	EOF15	NULL		
011735	100006	7201	14	000	8089	LXLO	.WEICM,4,P.IOQ	RE-LOAD DCW BUFPTR AREA FOR EOF P	
011736	100007	7401	14	000	8090	STXD	.WEOFF,4,P.IOQ	SET 1ST DCW POINTER	
011737	100001	7211	14	000	8091	LXL1	.WEPRV,4,P.IOQ		
011740	044000	3010	03	000	8092	CANX1	.FFDCW+.FFAUX,DU		
011741	011747	6010	00	010	8093	TNZ	EOFST		
011742	400000	6355	00	000	8094	EPPR	P5,0,,P.DATA	SAVE P.DATA IN P5	
011743	100000	6345	00	000	8095	EPPR	P.DATA,0,,P.IOQ	SET DCW DATA DESC.	
011744	400001	7551	10	000	8096	STA	1,0,P.DATA	PUT IN TDCW IN WD1 OF DCW PAIR	
011745	000040	2360	07	000	8097	LDQ	.FDSSA,DL		
011746	100004	2561	14	000	8098	ORSQ	.WESCT,4,P.IOQ	SET EOF-DCW FLAG SET	
					8099	*			
	011747				8100	EOFST	NULL		
011747	100024	2351	14	000	8101	LDA	.WEEND,4,P.IOQ	GET DATA DCW IN A-REG	
011750	400000	7551	10	000	8102	STA	0,0,P.DATA		
					8103	*			
					8104	*	GET RELATIVE ADDRESS OF	PAT IN X3	
					8105	*	AND ACCESS TYPE IN X0		
					8106	*			
011751	100013	2361	14	000	8107	LDQ	.WEIOS,4,P.IOQ	GET BLOCK OR RECORD DATA	
011752	100000	2231	14	000	8108	LDX3	.WEST,4,P.IOQ	PAT OFFSET IN X3	
011753	006204	4704	07	000	8109	LDP	P0,SD,PSH,DL		
011754	000002	6725	00	000	8110	LDD	P2,PH,PAT,,P0	LOAD PAT DESC.	
011755	100006	2201	14	000	8111	LDX0	.WEICM,4,P.IOQ	LOAD ACCESS TYPE IN X0	
011756	012005	6000	00	010	8112	TZE	EOF18	SYOT NO PAT ABSOLUTE BLOCK	
011757	012014	6040	00	010	8113	TMI	EOF19	RANDOM FILE	
					8114	*			
					8115	*	LINKED FILE, GET SEEK FROM EP-2		
					8116	*			
011760	000077	3160	07	000	8117	CANQ	=077,DL	SEE IF RECORD COUNT ZERO	
011761	011765	6010	00	010	8118	TNZ	EOF16	NO O.K. TO SUBTRACT	
011762	777700	3160	03	000	8119	CANQ	=0777700,DU	SEE IF ODD BLOCK EXISTS	
011763	011766	6010	00	010	8120	TNZ	EOF17	RESIDUE DONT SUBTRACT	
011764	012071	7100	00	010	8121	TRA	EOF30	USER EXCEEDED MOD 320 REC SIZE	
					8122	*			
	011765				8123	EOF16	NULL		

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011765	000001	1360	07	000	8124	SBLQ	1,DL	RECORDS -1 IN QR	
					8125	*			
					011766	8126	EOF17	NULL	
011766	000077	3760	07	000	8127	ANQ	=077,DL	63 MAX	
011767	300000	4110	03	000	8128	LDE	=0300000,DU	SET SKWPT FLAG	EL8.
011770	011206	7050	00	010	8129	TSX5	MSCSK	GET SEEK ADDRESS	EL8.
011771	012035	7100	00	010	8130	TRA	EOF22	OOPS ERROR FOR SEEK	
011772	777700	2350	03	000	8131	LDA	=0777700,DU	MASK FOR ODD BLOCK	
011773	100013	3551	14	000	8132	ANSA	.WEIOS,4,P.IOQ	WIPE OUT OLD RECORD COUNT	
011774	012017	6000	00	010	8133	TZE	EOF20	NO ODD BLOCK NO FUNNY STUFF	
011775	100013	1161	14	000	8134	CMPQ	.WEIOS,4,P.IOQ	TEST BLOCK COUNT LIMIT	
011776	012000	6020	00	010	8135	TNC	*+2	MUST BE MAX BLOCK COUNT	
011777	100013	1361	14	000	8136	SBLQ	.WEIOS,4,P.IOQ	DECREMENT BLOCK COUNT	
012000	100006	7561	14	000	8137	STQ	.WEICM,4,P.IOQ	SAVE FOR NOW	
012001	100013	2351	14	000	8138	LDA	.WEIOS,4,P.IOQ	GET ODD BLOCK	
012002	000030	7710	00	000	8139	ARL	24	RIGHT JUSTIFY	
012003	100013	0551	14	000	8140	ASA	.WEIOS,4,P.IOQ	UPDATE SEEK ADDR.	
012004	012020	7100	00	010	8141	TRA	EOF21		
					8142	*			
					8143	*	SYOT SPECIAL GET ABSOLUTE BLOCK #		
					8144	*			
					012005	8145	EOF18	NULL	
012005	000004	6230	14	000	8146	EAX3	.WESCT,4	NO PAT, USE I/O ENTRY	
012006	006131	4704	07	000	8147	LDP	PO,SD,DDC,DL	GET DDD SEGMENT	IOSC1930
012007	701403	2201	11	000	8148	LDX0	.CRCT4,1,P.CR	CHANNEL ENTRY	IOS01940
012010	000005	4705	10	000	8149	LDP	PO,5,C,PC	#5	IOS01950
012011	000000	7011	00	000	8150	TSX1	0,,PO	GO TO CHANNEL MODULE	IOS01960
012012	012046	7100	00	010	8151	TRA	EOF26	ERROR ON RANDOM SEEK	
012013	012017	7100	00	010	8152	TRA	EOF20		
					8153	*			
					8154	*	RUNDOM FILE USE EP-1		
					8155	*			
					012014	8156	EOF19	NULL	
012014	777777	4110	03	000	8157	LDE	-1,DU	SET MSKWPT FLAG	EL8.
012015	011206	7050	00	010	8158	TSX5	MSCSK	GET SEEK ADDRESS	EL8.
012016	012046	7100	00	010	8159	TRA	EOF26	ERROR ON RANDOM SEEK	
					8160	*			
					8161	*	OUT NEW SEEK ADDR		
					8162	*			
					012017	8163	EOF20	NULL	
012017	100006	7561	14	000	8164	STQ	.WEICM,4,P.IOQ	NEW ADDR NOW IN I/O ENTRY	
					8165	*			
					8166	*	UPDATE SCT ADDR MAY HAVE NEW DEVICE		
					8167	*			
					012020	8168	EOF21	NULL	
012020	720000	2210	03	000	8169	LDX1	=0720000,DU	MASC OWT SCT AND GEPR BIT	
012021	100004	3411	14	000	8170	ANSX1	.WESCT,4,P.IOQ	OUT WITH OLD SCT	
012022	100004	2401	14	000	8171	ORSX0	.WESCT,4,P.IOQ	IN WITH NEW SCT	
					8172	*			
					8173	*	FINISH REBUILDING I/O ENTRY		

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					8174 *				
012023	637777	2360	07	000	8175	LDQ	=0637777,DL	TURN OFF BIT 0-17,20,21	
012024	100000	3561	14	000	8176	ANSQ	.WEST,4,P.IOQ	IN WORDO OF I/O ENTRY	
012025	000000	6210	00	000	8177	EAX1	0		
012026	100001	7411	14	000	8178	STX1	.WEPRV,4,P.IOQ	CLEAR PREVIOUS ENTRY	
					8179 *				
					8180 *	LINK,	REISSUE AND EXIT		
					8181 *				
					8182 *				
012027	012031	6360	00	010	8183	EAQ	++2	SET EXIT	IOS05345
012030	004022	7100	00	010	8184	TRA	LINKF	LINK FIRST	IOS05350
					8185 *				
012031	000000	6230	14	000	8186	EAX3	0,4		
		012032			8187	.EXIT	4	RETURN TO DISP	
						INHIB	SAVE,ON		
012032	000002	6306	04	12034	EPPRO	++2,\$			
012033	700006	7103	00	000	TRA	.CREXT,,P.CR			
012034	000000	000004		000	ZERO	.RG,4			
					INHIB	RESTORE			
					8188 *				
					8189 *	ERROR EXISTS LINKED FILE RETURN RECORD RESIDUE			
					8190 *	AND LOGICAL EOF M.S. 17			
					8191 *				
		012035			8192 EOF22	NULL			
012035	100013	2351	14	000	8193	LDA	.WEIOS,4,P.IOQ	GET RECORD RESIDUE	
012036	000077	3750	07	000	8194	ANA	=077,DL	ISOLATE OTHER GARBAGE	
012037	570000	2200	03	000	8195	LDXO	=0570000,DU	GET LOGICAL EOF STATUS	IOS06660
012040	100010	7401	14	000	8196	STXO	.WEEP1,4,P.IOQ	SET IN LOGICAL EOF	
012041	100010	2551	14	000	8197	ORSA	.WEEP1,4,P.IOQ	INSERT RECORD RESIDUE	IOS06670
012042	012045	7100	00	010	8198	TRA	EOF25		
					8199 *				
					8200 *				
		012043			8201 EOF24	NULL			
012043	600077	2200	03	000	8202	LDXO	=0600077,DU	GET MASK FOR READY STATUS	
012044	100010	3401	14	000	8203	ANSXO	.WEEP1,4,P.IOQ	WIPE OUT EOF STATUS	
					8204 *				
		012045			8205 EOF25	NULL	RETURN STATUS TO USER		
012045	000000	6360	00	000	8206	EAQ	0	QR=0,RESULT RETURN STATUS	
					8207 *				
		012046			8208 EOF26	NULL			
012046	100010	2351	14	000	8209	LDA	.WEEP1,4,P.IOQ	LOAD STATUS	
012047	100001	7231	14	000	8210	LXL3	.WEPRV,4,P.IOQ	MOVE I/O ENTRY OFFSET TO X3	
012050	100000	1030	03	000	8211	CMPX3	.FFTYF,DU	IS IT SYSTEM I/O	
012051	012056	6010	00	010	8212	TNZ	EOF28	NO,EXIT TO GEPR	
012052	006013	4704	07	000	8213	LDP	PO,SD,IOQ,DL	SRW MUST BE SPECIFIED--YES	
012053	000014	6705	14	000	8214	LDD	PO,.WEICB,4,PO	DO STATUS RETURN	
012054	000004	7551	00	000	8215	STA	.IWST1,,PO		
012055	012065	7100	00	010	8216	TRA	EOF29	RETURN STATUS TO USER	
					8217 *				
					8218 *	CALLED FROM GEPR PUT SRW #1 IN I/O ENTRY			

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				8219 *			
		012056		8220 EOF28	NULL		
012056	100010	7551 14	000	8221	STA	.WEEP1,4,P.I0Q	IN WITH SRW#1
012057	260000	3160 03	000	8222	CANQ	=0260C00,DU	IS IT RANDOM FILE TO FAR OUT
012060	012065	6000 00	010	8223	TZE	EOF29	NO,RETURN STATUS TO USER
				8224 *			
				8225 *			
				8226 *			
012061	000000	6230 14	000	8227	EAX3	0,4	
		012062		8228	.EXIT	1	ABORT EXIT TO GEPR
					INHIB	SAVE,ON	
012062	000002	6306 04	12064		EPPRO	**2,\$	
012063	700006	7103 00	000		TRA	.CREXT,,P.CR	
012064	000000	000001	000		ZERO	.RG,1	
					INHIB	RESTORE	
				8229 *			
				8230 *			
				8231 *			
				8232 *			
		012065		8233 EOF29	NULL		
012065	000000	6230 14	000	8234	EAX3	0,4	
		012066		8235	.EXIT	2	RETURN STATUS TO USER EXIT FROM G
					INHIB	SAVE,ON	
012066	000002	6306 04	12070		EPPRO	**2,\$	
012067	700006	7103 00	000		TRA	.CREXT,,P.CR	
012070	000000	000002	000		ZERO	.RG,2	
					INHIB	RESTORE	
				8236 *			
				8237 *			
				8238 *			
				8239 *			
		012071		8240 EOF30	NULL		
012071	100007	2231 14	000	8241	LDX3	.WE0FF,4,P.I0Q	GET ADDR OF DCW
012072	500000	2351 13	000	8242	LDA	0,3,P5	
012073	100012	7551 14	000	8243	STA	.WEEP2,4,P.I0Q	
012074	012043	7100 00	010	8244	TRA	EOF24	

EP #30 RESET (ISSUE RESET PCW COMMAND TO PSIA CHANNEL)

8246 *
 8247 * CALLED BY T & D ONLY
 8248 *
 8249 * INPUT REGISTERS
 8250 * A = PCW ODD IMAGE
 8251 * X-1 = TRUE CHANNEL INDEX OF CHANNEL TO BE RESET
 8252 * CDR7 = P.CR
 8253 *

Address	PCW	Channel	Index	Mode	Op	Op Code	Op Name	Comments
						012075	8254	RESET NULL
012075	701200	2241	11	000	8255	LDX4	.CRI01,1,P.CR	ZERO I/O ENTRY ADDR INDICATES RESET P
012076	012374	6010	00	010	8256	TNZ	RLXIT	CHANNEL BUSY, CAN'T DO IT EL8.
012077	701203	7221	11	000	8257	LXL2	.CRI04,1,P.CR	
012100	003774	3620	03	000	8258	ANX2	.FCHNX,DU	LOGICAL CHANNEL INDEX
012101	701400	2361	12	000	8259	LDQ	.CRCT1,2,P.CR	
012102	003077	3760	03	000	8260	ANQ	=03077,DU	IOM# AND CHANNEL#
012103	770000	2760	07	000	8261	ORQ	=0770000,DL	PMB WITH RESET PCW COMMAND
					8262	INHIB	ON	
					8263	.SHUT	.CRGGT,,P.CR	
012107	701002	2203	11	000	8264	LDX0	.CRMB3,1,P.CR	INITIALIZE EXTEND MBX REGISTER
012110	000002	6232	10	000	8265	EAX	EMX,2,0	
012111	006063	4736	07	000	8266	LDP	P.EMB,SD,RMS,DL	SET EXTEND DESCRIPTOR
					8267			
012112	010653	7552	00	010	8268	STA	CNECT+3	SET PCW ODD IMAGE
012113	770000	2352	07	000	8269	LDA	=0770000,DL	IDCW FOR RESET PCW
012114	012374	6232	00	010	8270	EAX3	RLXIT	SET RETURN EL8.
012115	010654	7432	17	010	8271	STX3	STI03,7	
					8272 *			
012116	010427	7102	00	010	8273	TRA	RSET	ISSUE CONNECT AND OPEN GATE

EP # 32 UNLNK- ROUTINE FOR UNLINKING OF I/O ENTRIES

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8324 *
8325 *
8326 *          CALLED FROM .MDISP TO UNLINK ENTRY FROM COURTESY CALL
8327 *          QUEUE PRIOR TO PAYING THE COURTESY CALL
8328 *
8329 *          CALLED FROM .MPOP TO UNLINK I/O FROM CONSOLE QUEUE
8330 *          FOR MOVE VERB FROM OPERATOR
8331 *
8332 *
8333 *          REGISTER REQUIREMENTS ON ENTRY
8334 *          A REGISTER
8335 *          IF ZERO UNLINK ALL I/O ENTRIES FOR PROCESS
8336 *          IF NONZERO ENTRY POINTED TO BY X4 WILL BE UNLINKED
8337 *          Q REGISTER
8338 *          IF ZERO SET UNLINKED ENTRIES TO OPEN STATUS
8339 *          IF ONE SET ALL UNLINKED ENTRIES TO BUILDING STATUS
8340 *          IF TWO SET ALL UNLINKED ENTRIES TO REMOVED (TO SWAP)
8341 *          X0      DON'T CARE
8342 *          X1      DON'T CARE
8343 *          X2      DON'T CARE
8344 *          X3      DON'T CARE
8345 *          X4      IF NONZERO, ABS ADDR. OF I/O ENTRY TO BE UNLINKED
8346 *          X6      KPX
8347 *          X7      CPUNO
8348 *
8349 *          INHIB  ON
012155 8350 UNLNK  NULL
8351 *          SAVE USER REGISTERS
012155 006013 4716 07 000 8352          LDP      P.IOQ,SD,IOQ,DL
012156 001761 4716 07 000 8353          LDP      P.IOQ,,CTYP,DL          GET I/O ENTRY DESCRIPTOR
012157 003434 7532 37 010 8354          SREG     ALLREG,7*
012163 000000 1152 03 000 8355          .SHUT   .CRQGT,,P.CR
012163 012176 6012 00 010 8356          CMPA    0,DU          IS THIS REQUEST TO UNLINK ALL ACTIVE
012164 012176 6012 00 010 8357 *          ENTRIES
012165 600007 2243 00 000 8358          TNZ     ACTNT          NO, UNLINK ACTIVE ENTRY IN X4
012166 600042 7213 00 000 8359          LDX4    .SNIO,,P.SSA          GET OFFSET TO USER ENTRIES
8360          LXL1    .SECNT,,P.SSA          GET NUMBER OF ENTRIES
8361 *
012167 8362 NEWNT  NULL
012167 100000 2353 14 000 8363          LDA     .WEST,4,P.IOQ          GET STATUS OF ENTRY
012170 000077 3752 07 000 8364          ANA     .FIOST,DL          ISOLATE IT
012171 012176 6012 00 010 8365          TNZ     ACTNT          THIS ONE MAY BE ACTIVE
8366 *
012172 8367 NXTNT  NULL
012172 100002 7243 14 000 8368          LXL4    .WEPLK,4,P.IOQ          INCREMENT ADDRESS TO NEXT ENTRY
012173 000001 1212 03 000 8369          SELX1  1,DU          DECREMENT ENTRY COUNT
012174 012167 6012 00 010 8370          TNZ     NEWNT          NOT THRU YET
012175 012211 7102 00 010 8371          TRA     UNXIT          FINISHED, CHECK COUNT
8372 *
012176 8373 ACTNT  NULL

```

EP # 32 UNLNK- ROUTINE FOR UNLINKING OF I/O ENTRIES

012176	000000	1042	03	000	8374	CMPX4	0,DU	IS X4 KOSHER	IOS04A5R
012177	012321	6002	00	010	8375	TZE	CCZOP+1	NO	IOS04A5R
012200	100000	2353	14	000	8376	LDA	.WEST,4,P.IOQ	GET WORD # 0	
012201	000077	3752	07	000	8377	ANA	.FIOST,DL	ISCLATE QUEUE STATE	
012202	000002	1152	07	000	8378	CMPA	2,DL	IS THIS LINKED I/O	
012203	012217	6002	00	010	8379	TZE	ULNKI	YES, GO UNLINK IT	
012204	000005	1152	07	000	8380	CMPA	5,DL	IS IT LINKED COURTESY CALL	
012205	012256	6002	00	010	8381	TZE	ULNKC	YES, GO UNLINK IT	
					8382 *				
					012206	8383 CKND	NULL		
012206	003434	2202	17	010	8384	LDXO	ALLREG,7	GET ADDRESS OF REG STORE	
012207	000004	2342	10	000	8385	SZN	4,0	WAS THIS ONLY ENTRY TO UNLINK	
012210	012172	6002	00	010	8386	TZE	NXTNT	NO, GET NEXT ENTRY	
					8387 *				
					012211	8388 UNXIT	NULL	ALL LINKED QUEUE ENTRIES HAVE BEEN UNLINKED	
					012211	8389	.OPEN	.CRGGT,,P.CR	
012213	003434	0732	37	010	8390	LREG	ALLREG,7*	RESTORE REGISTERS	
					8391 *				
					012214	8392	.EXIT	GO BACK TO CALLER	
						INHIB	SAVE,ON		
012214	000002	6306	04	12216		EPPRO	**2,\$		
012215	700006	7103	00	000		TRA	.CREXT,,P.CR		
012216	000000	000000	000	000		ZERO	.RG,		
						INHIB	RESTORE		
					8393 *				
					8394 *				
					012217	8395 UNLNKI	NULL		
012217	012254	7412	00	010	8396	STX1	QCNT1	SAVE ENTRY COUNT	
012220	100004	2213	14	000	8397	LDX1	.WESCT,4,P.IOQ	GET ENTRY SCT ADDRESS	
012221	017774	3612	03	000	8398	ANX1	.FSCT1,DU	ISOLATE IT	
012222	013354	7002	00	010	8399	TSXO	ILPCX	GO CALCULATE LOGICAL CHANNEL INDEX	
012223	000000	0112	00	000	8400	NCP		ERROR RETURN	
012224	020000	2352	07	000	8401	LDA	.FSPEC,DL	WAS THIS ENTRY GESPECED	
012225	100000	3153	14	000	8402	CANA	.WEST,4,P.IOQ		
012226	012252	6002	00	010	8403	TZE	GTST1	NO, GET STATE FOR ENTRY AFTER UNLINK	
012227	000001	1062	03	000	8404	CMPX6	.PNPOP,DU	IT THIS PNPOP	IOS04AAM
012230	012246	6012	00	010	8405	TNZ	ULDWCW	NO	IOS04AAM
012231	040000	2362	07	000	8406	LDQ	.FFDCW,DL	YES, GET MASK	IOS04AAM
012232	100001	3163	14	000	8407	CANQ	.WEPRV,4,P.IOQ	IS %NODCW SET	IOS04AAM
012233	012246	6002	00	010	8408	TZE	ULDWCW	NO	IOS04AAM
012234	006204	4706	07	000	8409	LDP	PO,SD,PSH,DL	YES, GET PUSH	IOS04AAM
012235	000034	6707	00	000	8410	LDD	PO,PH,DCW,,PO	DCW SEGMENT	IOS04AAM
012236	100007	2203	14	000	8411	LDXO	.WEOFF,4,P.IOQ	DCW PTR	IOS04AAM
012237	777777	2362	03	000	8412	LDQ	-1,DU	FLAG	IOS04AAM
012240	000000	7563	10	000	8413	STQ	0,0,PC	RELEASE DCW	IOS04AAM
012241	100001	7203	14	000	8414	LXLO	.WEPRV,4,P.IOQ		IOS04AAM
012242	001000	3002	03	000	8415	CANXO	.FFDD2,DU	IS 2ND DCW USED	IOS04AAM
012243	012246	6002	00	010	8416	TZE	ULDWCW	NO	IOS04AAM
012244	100007	7203	14	000	8417	LXLO	.WEOFF,4,P.IOQ	YES, GET POINTER	IOS04AAM
012245	000000	7563	10	000	8418	STQ	0,0,PC	RELEASE 2ND DCW	IOS04AAM

EP # 32 UNLNK- ROUTINE FOR UNLINKING OF I/O ENTRIES

012246	000400	2362	03	000	8419	ULDCW	NULL			IOS04AAM
012246	000400	2362	03	000	8420	LDQ	.FSPOK,DU	IS CHANNEL GESPECABLE		
012247	701400	3163	12	000	8421	CANQ	.CRCT1,2,P.CR			
012250	012252	6012	00	010	8422	TNZ	GTST1	YES, LEAVE BIT ON IN ENTRY		
012251	100000	6553	14	000	8423	ERSA	.WEST,4,P.IOQ	NO, TURN BIT OFF IN ENTRY		
					8424	*				
					8425	GTST1	NULL			
012252	000000	2212	03	000	8426	LXD1	0,DU	SET I/O UNLINK FLAG		
012253	012330	7002	00	010	8427	TSX0	GTSTAT	GO GET STATUS AND UNLINK I/O		
012254	000000	2212	03	000	8428	QCNT1	LXD1	**DU	RESTORE ENTRY COUNT	
012255	012206	7102	00	010	8429	TRA	CKND	GO CHECK IF FINISHED		
					8430	*				
					8431	ULNKC	NULL			
012256	006133	4736	07	000	8432	LDP	PS.KL,SD,KL,DL	GET KL DESCRIPTOR		
					8433	.SHUT	.KLSCC,,PS,KL			
					8434	*				
012262	012314	7412	00	010	8435	STX1	QCNT2	SAVE ENTRY COUNT		
012263	000001	2212	03	000	8436	LXD1	1,DU	SET COURTESY CALL FLAG		
					8437	*				
					8438	*		DECREMENT COURTESY CALL COUNTS FOR SYSTEM AND PROCESS		
012264	600027	2363	00	000	8439	LDQ	.SCCAL,,P.SSA	TOTAL CC COUNT		IOS06045
012265	000001	1362	03	000	8440	SBLQ	1,DU	DECREMENT TOTAL COUNT		IOS06050
012266	012320	6042	00	010	8441	TMI	CCZOP	TOTAL COUNT NEGATIVE ILLEGAL		
012267	000220	2352	07	000	8442	LDA	.FSYOT+,FNABT,DL	TEST SYSTEM CC COUNT		
012270	100004	3153	14	000	8443	CANA	.WESCT,4,P.IOQ	IS SYOT CC		
012271	012275	6012	00	010	8444	TNZ	QCNT2	YES, DECREMENT SYSTEM CC COUNT		
012272	100000	2352	07	000	8445	LDA	.FFTYP,DL	TEST IS SYSTEM ENTRY		
012273	100001	3153	14	000	8446	CANA	.WEPRV,4,P.IOQ			
012274	012276	6002	00	010	8447	TZE	QCNT21	NO, USER ENTRY		
					8448	QCNT22	NULL			
012275	000001	1362	07	000	8449	SBLQ	1,DL	DECREMENT SYSTEM CC COUNT		IOS06065
					8450	*				
					8451	*		TEST COURTESY CALL REQUEST COUNT		
					8452	*		IF ZERO, TURN OFF CC REQUEST BIT (.RSYCC,.RCC)		
					8453	*		IF LOWER ZERO, TURN OFF SYSTEM CC REQUEST BIT (.RSYCC)		
					8454	*				
					8455	QCNT21	NULL			
012276	600027	7563	00	000	8456	STQ	.SCCAL,,P.SSA	RESTORE COUNT		IOS06075
012277	012330	7002	00	010	8457	TSX0	GTSTAT	GET STATE & UNLINK COURTESY CALL		IOS06080
012300	000405	3212	03	000	8458	LCX1	.RSYCC+,RCC+1,DU	PREPARE MASK		XXXX3630
012301	600027	2343	00	000	8459	QCNT24	SZN	.SCCAL,,P.SSA	ANY CC LEFT	XXXX3640
012302	012313	6002	00	010	8460	TZE	QCNT25	NO		XXXX3650
012303	012320	6042	00	010	8461	TMI	CCZOP	WOOPS		XXXX3660
012304	600027	7203	00	000	8462	LXL0	.SCCAL,,P.SSA	YES, ANY SYSTEM CC		XXXX3670
012305	012312	6002	00	010	8463	TZE	QCNT25-1	NO		XXXX3680
012306	012320	6042	00	010	8464	TMI	CCZOP	WOOPS		XXXX3690
012307	000400	2612	03	000	8465	ORX1	.RSYCC,DU	YES, KEEP FLAG		XXXX3700
012310	600027	1003	00	000	8466	CMPX0	.SCCAL,,P.SSA	SYSTEM CC ONLY		XXXX3710
012311	012313	6002	00	010	8467	TZE	QCNT25	YES		XXXX3720
012312	000004	2612	03	000	8468	ORX1	.RCC,DU	NO, ONLY USER CC LEFT		XXXX3730

EP # 32 UNLNK- ROUTINE FOR UNLINKING OF I/O ENTRIES

012313	600117	3413	00	000	8469	QCNT25	ANSX1	.SRQST,,P.SSA	UPDATE CC FLAGS	XXXX3740
					8470					
012314	000000	2212	03	000	8471	QCNT2	LDX1	**DU	RESTORE ENTRY COUNT	
					8472		.OPEN	.KLSCC,,P.SSA		
					8473		*			
012317	012206	7102	00	010	8474		TRA	CKND	GO CHECK FOR FINISH	
					8475		*			XXXX3760
012320	000070	7162	00	010	8476	CCZOP	XEC	DEBUG	TEST DEBUG MODE	XXXX3770
					8477		ZOP	7	YES, TILT	XXXX3780
012322	600027	7203	00	000	8478		LXLO	.SCCAL,,P.SSA	NO, FORGE AHEAD	XXXX3790
012323	000003	6052	04	000	8479		TPL	3,IC	COUNT OK	XXXX3800
012324	000000	6202	00	000	8480		EAXO	0	SNAFU	XXXX3810
012325	600027	4403	00	000	8481		SXLO	.SCCAL,,P.SSA	FORCE IT TO ZERO	XXXX3820
012326	600027	7403	00	000	8482		STXO	.SCCAL,,P.SSA	FORCE UPPER TO LOWER	XXXX3830
012327	012301	7102	00	010	8483		TRA	QCNT24	BACK AT IT	XXXX3840
					8484		*			
					8485	GTSTAT	NULL			
012330	012343	7402	00	010	8486		STXO	GTSVX	SAVE CALLING ADDRESS	
012331	003434	2202	17	010	8487		LDXO	ALLREG,7	GET ADDRESS OF REGISTER STORE	
012332	000005	2362	10	000	8488		LDQ	5,0	GET INPUT Q-REG	
012333	012344	6012	00	010	8489		TNZ	STKEP		XXXX3860
					8490		*			
					8491	STFRE	NULL	SET ALL UNLINKED ENTRIES TO FREE		
012334	000000	6362	11	000	8492		EAQ	0,1	GET CC OR I/O QUEUE KEY	
012335	420000	2352	07	000	8493		LDA	.FSTOP+.FSPEC,DL	SAVE STOP AND GESPECED BITS	
012336	000000	2212	03	000	8494		LDX1	0,DU	AMOUNT TO DECREMENT IN XMISSION COUNT (UNLINKING ONLY DONE FOR USER)	
					8495		*			
012337	013201	7002	00	010	8496		TSXD	ULNK	GO UNLINK THIS ONE	
					8497		*			
					8498		*	TEST STATUS, IF OPEN, UN-LINK I/O ENTRY FROM PROCESS		
					8499		*			
012340	000077	3162	07	000	8500		CANQ	.FIOST,DL	IS OPEN STATUS	
012341	012343	6012	00	010	8501		TNZ	GTSVX	NO	
					8502		*			
					8503		.ULINK		UN-LINK FROM PROCESS QUEUE	
012342	012644	7002	00	010			TSXD	ULINK		
					8504		*			
012343	000000	7102	00	000	8505	GTSVX	TRA	**	RETURN ENTRY UNLINKED	
					8506		*			XXXX3880
012344	000002	1162	03	000	8507	STKEP	CMPQ	2,DU	DECODE REQUEST	XXXX3890
012345	012350	6022	00	010	8508		TNC	STBLD	SET BUILDING	XXXX3900
012346	012353	6002	00	010	8509		TZE	STRMV	SET REMOVED (SWAP)	XXXX3910
012347	012334	7102	00	010	8510		TRA	STFRE	BUM, TREAT AS FREE	XXXX3920
					8511		*			
					8512	STBLD	NULL	SET ALL UNLINKED ENTRIES TO BUILDING		
012350	000000	6362	11	000	8513		EAQ	0,1	GET CC OR I/O KEY	
012351	000001	2762	07	000	8514		ORQ	1,DL	SET BUILDING KEY	
012352	012335	7102	00	010	8515		TRA	STFRE+1	GO GET MASK AND UNLINK IT	
					8516		*			
					8517	STRMV	NULL	SET ALL UNLINKED ENTRIES TO REMOVED		

EP # 32 UNLNK- ROUTINE FOR UNLINKING OF I/O ENTRIES

012353	000000	6362	11	000	8518	EAQ	0,1	GET C.C. OR I/O KEY TO UPPER
012354	400000	2762	07	000	8519	ORQ	.FSTOP,DL	SET STOP TO REMOVE
012355	012335	7102	00	010	8520	TRA	STFRE+1	GO SET MASK AND UNLINK IT
					8521 *			
					8522	INHIB	OFF	

EP # 33 RLKCC- RELINK COURTESY CALL TO CRTSY CALL QUEUE

8524 *
 8525 * REGISTER REQUIREMENTS FOR ENTRY
 8526 *
 8527 *
 8528 * A DON'T CARE - DESTROYED
 8529 * Q DON'T CARE - DESTROYED
 8530 * X0 DON'T CARE - DESTROYED
 8531 * X1 DON'T CARE - NOT USED
 8532 * X2 DON'T CARE - RESTORED
 8533 * X3 DON'T CARE - DESTROYED
 8534 * X4 OFFSET TO I/O ENTRY TO BE LINKED
 8535 * X6 KPX
 8536 * X7 CPUNO

8537 *
 8538 * THIS ENTRY POINT WILL LINK ANY COURTESY CALL TO DISPATCHERS
 8539 * COURTESY CALL QUEUE AND ENABLE THE PROCESS, IT WILL
 8540 * TAKE CARE OF SYSTEM COURTESY CALL COUNT, PROCESS COURTESY
 8541 * CALL COUNT, AND PROCESS STATE WORD BEFORE RETURNING
 8542 *

					012356	8543 RLKCC	NULL		
						8544	INHIB	ON	
012356	012374	6202	00	010		8545	EAXO	RLXIT	IOS00990
012357	003434	7532	37	010		8546	SREG	ALLREG,7*	IOS01000
012360	006013	4716	07	000		8547	LDP	P.IOQ,SD.IOQ,DL	
012361	001761	4716	07	000		8548	LDP	P.IOQ,.CTYP,DL	
						8549 *			
					012362	8550	.SHUT	.CRQGT,,P.CR	SHUT QUEUE GATE
						8551 *			
012365	000100	3352	07	000		8552	LCA	.FIOST+1,DL	MASK = 77777777700
012366	100000	3553	14	000		8553	ANSA	.WEST,4,P.IOQ	ZERO ENTRY STATE
012367	100000	0543	14	000		8554	AOS	.WEST,4,P.IOQ	SET TO BUILDING
012370	003434	2222	17	010		8555	LDX2	ALLREG,7	LOCATE REGS
012371	000007	7526	12	000		8556	STWS	7,2	SAVE CURRENT WSR 4-7
012372	006133	4736	07	000		8557	LDP	PS.KL,SD.KL,DL	GET KL SEGMENT DESC.
						8558 *			
						8559 *			
012373	003233	7102	00	010		8560	TRA	LNKCC	GO TO STATUS RETURN ROUTINE TO LINK I
						8561 *			
						8562 *			
						8563 *			
						8564	RLXIT	NULL	
					012374	8565	.EXIT		EXIT BACK TO CALLER
					012374		INHIB	SAVE,ON	
012374	000002	6306	04	12376			EPPRO	**2,\$	
012375	700006	7103	00	000			TRA	.CREXT,,P.CR	
012376	000000	000000	000	000			ZERO	.RG,	
							INHIB	RESTORE	
						8566	INHIB	OFF	

***EP37 EP37 (GET SYSTEM ENTRY *QUEUS*)

				8568 *				
				8569 *	EP37	EP37		
				8570 *		TO GET SYSTEM I/O ENTRY		
				8571 *				
				8572 *	INPUT.	NONE		
				8573 *	OUTPUT.	X4 I/O ENTRY ADDRESS		
				8574 *		CDR1 P.IOQ		
				8575 *				
				8576				
		012377		8577 EP37	NULL			
				8578 *				
012377	012534	7000 00	010	8579	TSX0	QUEUS	CALL QUEUS SUBROUTINE	
				8580 *				
		012400		8581	.EXIT	0,(X4,P1)	RETURN TO CALLER	
					INHIB	SAVE,ON		
012400	000002	6306 04	12402		EPPRO	*+2,\$		
012401	700006	7103 00	000		TRA	.CREXT,,P.CR		
012402	010200	000000	000		ZERO	.RG,0		
					INHIB	RESTORE		
				8582 *				
				8583 *				

*** EP38 EP38 (UNLINK I/O ENTRY)

8585 *
 8586 * EP38 EP38
 8587 * TO UNLINK I/O ENTRY FROM PROCESS
 8588 *
 8589 * INPUT. X4 I/O ENTRY ADDRESS
 8590 * X6 KPX
 8591 * X7 CPUNO
 8592 * ODR6 P.SSA
 8593 * ODR7 P.CR
 8594 * OUTPUT. NONE
 8595 *

012403

8596
 8597 EP38 NULL
 8598 *
 8599 * TEST I/O ENTRY ADDRESS AND STATUS
 8600 *

012403 006013 4704 07 000
 012404 001761 4704 07 000
 012405 000000 2361 14 000
 012406 000077 3760 07 000
 012407 012374 6000 00 010

8601 LDP PO,SD,IOG,DL
 8602 LDP PO,CTYP,DL
 8603 LDQ .WEST,4,PO TEST I/O ENTRY STATUS
 8604 ANQ .FIOST,DL IF ALREADY OPEN, ILLEGAL
 8605 TZE RLXIT DON'T UNLINK, EXIT
 8606 INHIB ON
 8607 .SHUT .CRGGT,,P.CR SHUT IOQ GATE
 8608 TSXD ULINK CALL UNLINK SUBROUTINE

EL8.
EL8.
EL8.

012413 012644 7002 00 010

8609 *
 8610 .OPEN .CRGGT,,P.CR OPEN I/O QUEUE GATE

012416 012374 7102 00 010

8611 *
 8612 TRA RLXIT EXIT
 8613 INHIB OFF

EL8.

8614 *
 8615 *

*** EP39 SKWPT(LINK/LLINK SEEK CALCULATION WITH PAT)

					8617 *					
					8618 *	EP39	EP39			
					8619 *		LINK/LLINK SEEK CALCULATION WITH PAT INPUT			
					8620 *					
					8621 *	INPUT.	SEE SKWPT			
					8622 *	OUTPUT.	SEE SKWPT			
					8623 *					
					8624					
012417	777777	4110	03	000	8625	EP39	LDE -1,DU	SET MSKWPT FLAG	EL8.	
012420	600012	7451	56	000	8626		STX5 .SSA,DI,P.SSA	SAVE X5		
012421	000000	6220	11	000	8627		EAX2 ,1	GET LCX		
012422	011206	7050	00	010	8628		TSX5 MSCSK	GET SEEK ADDRESS	EL8.	
012423	012425	7100	00	010	8629		TRA EP39N			
012424	012431	7100	00	010	8630		TRA EP39E			
					8631					
					8632	EP39N	NULL			
012425	600012	2251	54	000	8633		LDX5 .SSA,DI,P.SSA	RESTORE X5		
					8634		.EXIT 0,(A,Q,X0,X3)	NORMAL RETURN		
							INHIB SAVE,CN			
012426	000002	6306	04	12430			EPPRO *+2,\$			
012427	700006	7103	00	000			TRA .CREXT,,P.CR			
012430	221400	000000		000			ZERO .RG,0			
							INHIB RESTORE			
					8635					
					8636	EP39E	NULL			
012431	600012	2251	54	000	8637		LDX5 .SSA,DI,P.SSA	RESTORE X5		
					8638		.EXIT 1,(A,Q,X0,X3)	ERROR RETURN		
							INHIB SAVE,CN			
012432	000002	6306	04	12434			EPPRO *+2,\$			
012433	700006	7103	00	000			TRA .CREXT,,P.CR			
012434	221400	000001		000			ZERO .RG,1			
							INHIB RESTORE			

*** EP40 MSKWPT(MULTIRECORD SEEK CALCULATION WITH PAT)

8640 *
 8641 * EP40 EP40
 8642 * MULTIRECORD LINK/LLINK SEEK CALCULATION WITH PAT INPUT
 8643 *
 8644 * INPUT. SEE MSKWPT
 8645 * OUTPUT. SEE MSKWPT
 8646 *
 8647

012435

8648 EP40 NULL

8649

012435 300000 4110 03 000

8650

LDE =0300000,DU

SET SKWPT FLAG

EL8.

012436 012420 7100 00 010

8651

TRA EP39+1

EL8.

*** EP41=DBSCR EP42=LSKWA EP43=LLSKWA EP45=CHBLK

8653 *
 8654 *
 8655 * EP41 EP41(DBSCR)
 8656 * DIAGNOSTIC BLOCK SEEK CALCULATION ROUTINE
 8657 * (CHANNEL MODULE -3 ENTRY)
 8658 * EP42 EP42(LSKWA)
 8659 * LINK SEEK CALCULATION ROUTINE WITH ABSOLUTE BLOCK
 8660 * NUMBER INPUT
 8661 * (CHANNEL MODULE -4 ENTRY)
 8662 * EP43 EP43(LLSKWA)
 8663 * LLINK SEEK CLACULATION ROUTONE WITH ABSOLUTE BLOCK
 8664 * NUMBER INPUT
 8665 * (CHANNEL MODULE -5 ENTRY)
 8666 *
 8667 * EP45 EP45(CHBLK)
 8668 * ROUTINE TO MAKE HEADER BLOCK CALCULATION
 8669 * (CHANNEL MODULE -17 ENTRY)
 8670 *

8671 * INPUT. A = RESIDUE (EP42 ONLY)
 8672 * Q = ABSOLUTE BLOCK NUMBER
 8673 * X1 = LCX
 8674 * X2 = DEVICE SCT ADDRESS (EP45 ONLY)
 8675 * X3 = SCT ADDRESS
 8676 * X6 = KFX
 8677 * X7 = CFUNO
 8678 * ODR6 = P.SSA
 8679 * ODR7 = P.CR

8680 *
 8681 * OUTPUT.
 8682 * Q = SEEK DATA OR STATUS
 8683 * STATUS = 60000 BACK TOO FAR
 8684 * = 50000 FOWARD TOO FAR
 8685 * = 44000 NON EXISTENT LLINK#
 8686 * X3 = SCT ADDRESS
 8687 * A = DESTROYED
 8688 * X0 = DESTROYED
 8689 *

8690 * NOTE. RETURN
 8691 * .EXIT 0 ERROR RETURN
 8692 * .EXIT 1 NORMAL RETURN
 8693 *

8694 * INHIB ON
 8695 *

012437 000003 6202 00 000
 012440 012444 7102 00 010

8696 EP41 EAXO 3
 8697 TRA DSINTF

IOS01750
 IOS01760
 IOS01770
 IOS01780
 IOS01790
 IOS01800
 IOS01810
 IOS01820

012441 000004 6202 00 000
 012442 012444 7102 00 010

8700 EP42 EAXO 4
 8701 TRA DSINTF
 8702

*** EP41=DBSCR EP42=LSKWA EP43=LLSKWA EP45=CHBLK

					8703					IOS01830
012443	000005	6202	00	000	8704	EP43	EAX0	5		IOS01840
					8705	*	TRA	DINTF		IOS01850
					8706					IOS01860
					8707					
					8708	DSINTF	NULL			
012444	006131	4706	07	000	8709		LDP	PO,SD,DDD,DL	GET CHANNEL DEPENDENT DATA	
012445	701403	0203	11	000	8710		ADLX0	.CRCT4,1,P.CR	GET SD TO TRANSFER	
012446	000000	4707	10	000	8711		LDP	PO,0,C,PC	GET CHANNEL MODULE DESCRIPTOR	
					8712					
012447	000000	7013	00	000	8713		TSX1	0,,PO	CALL CHANNEL MODULE	
012450	012454	7102	00	010	8714		TRA	EP4XE	ERROR RETURN	IOS01880
					8715		.EXIT	1,(Q,X3)	NORMAL RETURN	IOS01890
							INHIB	SAVE,ON		
012451	000002	6306	04	12453			EPPRO	*+2,\$		
012452	700006	7103	00	000			TRA	.CREXT,,P.CR		
012453	020400	000001		000			ZERO	.RG,1		
							INHIB	RESTORE		
					8716					IOS01900
					8717	EP4XE	.EXIT	0,(Q,X3)	ERROR EXIT	IOS01910
							INHIB	SAVE,ON		
012454	000002	6306	04	12456			EPPRO	*+2,\$		
012455	700006	7103	00	000			TRA	.CREXT,,P.CR		
012456	020400	000000		000			ZERO	.RG,0		
							INHIB	RESTORE		
					8718					
					8719					
					8720					
					8721	EP45	NULL			
012457	000005	1162	07	000	8722		CMPQ	5,DL	ID HEADER BLCK	
012460	012374	6032	00	010	8723		TRC	RLXIT	NO, NORMAL REQUEST	EL8.
012461	000100	2762	03	000	8724		ORQ	1*64,DU	SET BLK LIMIT = 1	IOS04AAM
					8725		.EXIT	1	ERROR RETURN	
							INHIB	SAVE,CN		
012462	000002	6306	04	12464			EPPRO	*+2,\$		
012463	700006	7103	00	000			TRA	.CREXT,,P.CR		
012464	000000	000001		000			ZERO	.RG,1		
							INHIB	RESTORE		
					8726		INHIB	OFF		

*** EP44=CVBCH EP46=CVCHB

```

8728 *
8729 *
8730 * EP44 EP44(CVBCH)
8731 * CONVERT SEEK ADDRESS TO CYLINDER#, HEAD#
8732 * (CHANNEL MODULE -16 ENTRY)
8733 *
8734 * EP46 EP46(CVCHB)
8735 * CONVERT CYLINDER#, HEAD# TO ABSOLUTE BLOCK#
8736 * (CHANNEL MODULE -18 ENTRY)
8737 *
8738 * INPUT Q = ABSOLUTE SEEK ADDRESS (EP44)
8739 * = CYLINDER#, HEAD# (EP46)
8740 * X1 = LCX
8741 * X3 = I/O ENTRY ADDRESS
8742 * X6 = KFX
8743 * X7 = CFUNO
8744 * ODR1 = I/O ENTRY P.IOQ
8745 * ODR6 = P.SSA
8746 * ODR7 = P.CR
8747 *
8748 * OUTPUT A = DESTROYED
8749 * Q = CYLINDER#, HEAD# (EP44)
8750 * = ABSOLUTE BLOCK ADDRESS (EP46)
8751 * X0 = BPH
8752 *
8753 *
012465 8754 EP44 NULL EXTERNAL ENTRY
012465 000020 6200 00 000 8755 EAXO 16 RDSP2250
012466 012470 7100 00 010 8756 TRA DSCONV RDSP2260
8757
012467 8758 EP46 NULL EXTERNAL ENTRY
012467 000022 6200 00 000 8759 EAXO 18 RDSP2280
8760 * TRA DSCONV RDSP2290
012470 8761 DSCONV NULL
012470 006131 4704 07 000 8762 LDP PO,SD,DDD,DL GET DEVICE DEPENDENT TABLE
012471 701403 0201 11 000 8763 ADLXO .CRCT4,1,P.CR GET OFFSET ADDRESS POINTER
012472 000000 4705 10 000 8764 LDP PO,C,O,PC GET CHANNEL MODULE ENTRY DESC.
8765
012473 000000 7011 00 000 8766 TSX1 O,,PO GO TO CHANNEL MODULE
8767
012474 8768 .EXIT O,(Q,X0) RETURN RDSP2310
012474 000002 6306 04 12476 INHIB SAVE,ON
012475 700006 7103 00 000 EPPRO *+2,$
012476 200400 000000 000 TRA .CREXT,,P.CR
ZERO .RG,O
INHIB RESTORE
    
```


SUBROUTINE QUEUE

8770 *
8771 *
8772 *
8773 *
8774 *

SUBROUTINE QUEUE

8775
8776 FUNCTION. TO GET NORMAL I/O ENTRY
8777 INPUT. X0 RETURN ADDRESS
8778 X6 KPX
8779 X7 CPUNO
8780 ODR6 P.SSA
8781 ODR7 P.CR

8782
8783 OUTPUT. X4 ENTRY ADDRESS OR ZERO
8784 ODR1 SD.IOQ (TYPE=01)
8785 A/Q DESTROYED

8786
8787 NOTE. CALLER'S ODR1 IS SAVED IN WEEND.
8788

8789 *
8790 *
8791 *

8792
8793 INHIB ON
8794 QUEUE .SHUT .CRGRT,,P.CR
8795 STX0 .SSA,I,P.SSA
8796 SXL5 .SSA,ID,P.SSA
8797 LDA .SNIO,,P.SSA
8798 ANA -1,DL
8799 SBLA .SECNT,,P.SSA
8800 TMOZ QGEPR

IOS02435
IOS04AAM
IOS02445
IOS02450

012502 600012 7403 51 000
012503 600012 4453 56 000
012504 600007 2353 00 000
012505 777777 3752 07 000
012506 600042 1353 00 000
012507 012527 6046 00 010

012477

CHECK HOLDING ENTRY COUNT
IGNORE, ENTRY ADDRESS

OVER, TEST GEPR

XXXX3320

012510 012552 7052 00 010

8801 QUEG TSX5 GETENT

GET AN ENTRY

XXXX3340

012511 000000 1042 03 000
012512 012522 6002 00 010
012513 600042 0543 00 000
012514 600007 2203 00 000
012515 012520 6002 00 010
012516 100002 7403 14 000
012517 100002 4443 10 000
012520 600007 7443 00 000
012521 006013 4716 07 000

8802 *
8803 CMPX4 O,DU
8804 TZE QRET
8805 AOS .SECNT,,P.SSA
8806 LDXD .SNIO,,P.SSA
8807 TZE *+3
8808 STX0 .WEPLK,4,P.IOQ
8809 SXL4 .WEPLK,0,P.IOQ
8810 STX4 .SNIO,,P.SSA
8811 LDP P.IOQ,SD.IOQ,DL

CANT GET A ENTRY, .MIOS2 CALLED
ENTRY FOUND, COUNT HOLDING
GET PREVIOUS ENTRY ADDRESS
ZERO, FIRST ENTRY IN THIS PROCESS
RE-CHAINNING, TO NEXT
RE-CHAINNING, TO PREVIOUS
SET PROCESS CHAIN FIRST ADDRESS
GET P.IOQ (TYPE=01)

012522

012522 600012 2203 54 000
012523 600012 7253 51 000

8812 *
8813 QRET NULL
8814 LDXD .SSA,DI,P.SSA
8815 LXL5 .SSA,I,P.SSA
8816 .OPEN .CRGRT,,P.CR

RESTORE XRO
& XR5

IOS02465
IOS02470
IOS02475

012526 000000 7102 10 000

8817 TRA O,O

RETURN

8818 *
8819 *

SUBROUTINE QUEUE

					8820 *						
012527	600017	2203	00	000	8821	QGEPR	LDX0	.STATE,,P.SSA	GET PROGRAM STATE	XXXX3360	
012530	050000	3002	03	000	8822		CANX0	.TGPRS+.TGEPR,DU	IS GEPR IN CONTROL	XXXX3370	
012531	012510	6012	00	010	8823		TNZ	QUEG	YES, HONOR REQUEST	XXXX3380	
				012532	8824	QOVER	NULL				
012532	000000	6242	00	000	8825		EAX4	0	SET STATUS, ENTRY NOT ASSIGNED		
012533	012522	7102	00	010	8826		TRA	QRET	RETURN	IOS04AAM	

SUBROUTINE QUEUS

8828 *
8829 *
8830 *
8831 *
8832 *

SUBROUTINE QUEUS

8833
 8834 FUNCTION. TO GET SYSTEM I/O ENTRY CALLED BY CALLIO
 8835 INPUT. X0 RETURN ADDRESS
 8836 X6 KFX
 8837 X7 CPUNO
 8838 ODR6 P.SSA
 8839 ODR7 P.CR
 8840
 8841 OUTPUT. X4 ENTRY ADDRESS OR ZERO
 8842 ODR1 SD.IOQ (TYPE=01)
 8843 A/Q DESTROYED
 8844

8845 NOTE. CALLRE'S ODR1 IS SAVED IN WEEND.
8846

8847 *
8848 *

					012534	8849	QUEUS	.SHUT	.CRGCT	.P.CR		
012537	600012	7403	51	000	8850	STX0	.SSA	.I	.P.SSA		SAVE XRO	IOS04AAM
012540	600012	4453	56	000	8851	SXL5	.SSA	.ID	.P.SSA		& XR5	IOS02490
012541	600201	2203	00	000	8852	LDX0	.SSYIC	.P.SSA				IOS02495
012542	012532	6012	00	010	8853	TNZ	QOVER					IOS02505
					8854	*						IOS02510
012543	012552	7052	00	010	8855	TSX5	GETENT				GET ONE ENTRY	
					8856	*						
012544	000000	1042	03	000	8857	CMPX4	O,DU				CANT GET ENTRY	
012545	012522	6002	00	010	8858	TZE	QRET				SET ZERO	IOS02520
012546	100000	2352	07	000	8859	LDA	.FFTYF	.DL			SET FLAG SYSTEM ENTRY	
012547	100001	2553	14	000	8860	ORSA	.WEPRV	.4	.P.IOQ		SET	
012550	600201	7443	00	000	8861	STX4	.SSYIC	.P.SSA			SET ADDRESS AND ENTRY BUSY	
					8862	INHIB	OFF					IOS02530
012551	012521	7100	00	010	8863	TRA	QRET-1					IOS02535

SUBROUTINE GETENT (GET ONE ENTRY)

```

8865 *
8866 *   THIS ROUTINE IS CALLED BY QUEUE/QUEUS PROCESS.
8867 *
8868   SUBROUTINE GETENT
8869   FUNCTION.   .TO GET ONE ENTRY
8870             .TO MANAGE THE SPACE(PAGE) OF I/O ENTRY SEGMENT
8871
8872   INPUT.     X5   RETURN ADDRESS
8873             X6   KPX
8874             X7   CPUNO
8875             ODR6 P.SSA
8876             ODR7 P.CR
8877             .CRQGT MUST BE SHUT
8878
8879   OUTPUT     X4   ENTRY ADDRESS OR ZERO
8880             ODR1 P.IOQ (TYPE-00) OR USER'S ODR1
8881             X0   DESTROYED
8882             A/Q  DESTROYED
8883
8884   NOTE.     ENTRY IS INITIALIZED
8885             ENTRY STATUS BUILDING (01)
8886             KPX IS SETED
8887             ODR1 SAVED IN .WEEND
8888
8889 *

```

000014	8890	NQPAG	EQU	12	MAX # OF I/O QUEUE PAGES	IOS00045
000057	8891	BUGOPT	BOOL	57	DEBUG OPTION	IOS00050
000062	8892	MONOPT	BCOL	62	MONITOR OPTION	IOS00055
000040	8893	.WOPEN	EQU	.WECAV-6	ORIGIN OF AVAIL ENTRY TABLE	IOS00060
	8894		INHIB	ON		IOS01270
012552	8895	GETENT	NULL			IOS04AAM
012552	8896		EPPR	PO,C,,P1	SAVE USERS P1	IOS00070
012553	8897	GET1	TRA	ICHI	(ONCE ONLY, THEN LDP P.IOQ,SD.IOQ)	IOS00075
012554	8898		LDP	P.IOQ,,CTYP,DL	SET TYPE = 0	IOS00080
012555	8899		LXLO	.WEECT,,P.IOQ	GET FREE ENTRY COUNT	IOS00085
012556	8900		CMPX0	FSTTHR,DU	ARE MANY ENTRIES AVAILABLE	IOS00090
012557	8901		TMOZ	QFEW	NO	IOS00095
012560	8902		STZ	.WEMRT,,F.IOQ	YES, CLEAR TIME	IOS00100
012561	8903		STZ	.WEMRC,,F.IOQ	& THRESHOLD COUNT	IOS00105
012562	8904	QAVIL	EAA	0,5	SAVE XR5	IOS00110
012563	8905		EAX5	.WOPEN	POINT TO AVAIL CHAIN	IOS00115
012564	8906		RPT	NQPAG,1,TNZ	SCAN FOR AN ENTRY	IOS00120
012565	8907		LDX4	0,5,P.IOQ		IOS00125
012566	8908		TZE	NGETQ-1	NONE FOUND	IOS00130
012567	8909		LDX0	.WEST,4,P.IOQ	FOUND ONE, GET NEXT ENTRY PTR	IOS00135
012570	8910		STX0	-1,5,P.IOQ	SET NEW CHAIN HEAD IN TABLE	IOS00140
012571	8911		EAX0	0,4		IOS00145
012572	8912		ANX0	=0776000,DU	GET PAGE ORIGIN	IOS00150
012573	8913		EAX5	1		IOS00155
012574	8914		ASX5	.WEECT,0,P.IOQ	ADD TO PAGE USE COUNT	IOS00160

SUBROUTINE GETENT (GET ONE ENTRY)

012575	000000	6252	01	000	8915	EAX5	0, AU	RESTORE XR5	IOS00165
012576	000000	6352	14	000	8916	EAA	0, 4	PREPARE	IOS00170
012577	000002	7352	00	000	8917	ALS	2	MLR POINTER	IOS00175
012600	000001	3362	07	000	8918	LCQ	1, DL		IOS00180
012601	100004	0563	00	000	8919	ASQ	.WEECT, P.I0Q	REDUCE FREE ENTRY COUNT	IOS00185
012602	000101	1006	00	000	8920	MLR	.(1, AU)	CLEAR I/O ENTRY	IOS00190
012603	000000	0000	00	000	8921	ADSC9			IOS00195
012604	100000	0001	30	000	8922	ADSC9	0, 0, LIOES*4, P.I0Q		IOS00200
012605	100000	0543	14	000	8923	AOS	.WEST, 4, P.I0Q	SET STATUS=BUILDING	IOS00205
012606	100024	0507	14	000	8924	STD	PO, WEEND, 4, P.I0Q	SAVE USERS ODR1	IOS00210
012607	100003	4463	14	000	8925	SXL6	.WEPID, 4, P.I0Q		IOS00215
012610	000000	7102	15	000	8926	TRA	0, 5	RETURN	IOS00220
		000012			8927	THRCNT	EQU	10	THRESHOLD VALUE
012611	100007	4503	00	000	8928	QFEW	STZ	.WERLT, P.I0Q	CLEAR RLSE TIME
012612	100003	2343	00	000	8929	SZN	.WEPAD, P.I0Q	IS GROW ACTIVE	IOS00255
012613	012632	6042	00	010	8930	TMI	TNOVER	YES	IOS00260
012614	100006	2353	00	000	8931	LDA	.WEMRC, P.I0Q	NO, GET THRESHOLD COUNT	IOS00265
012615	000012	1152	07	000	8932	CMPA	THRCNT, DL	IS IT EXCESSIVE	IOS00270
012616	012626	6032	00	010	8933	TRC	THROVR	YES	IOS00275
012617	100006	0543	00	000	8934	AOS	.WEMRC, P.I0Q	NO, BUMP IT	IOS00280
012620	700040	4133	00	000	8935	RSCR	32, P.CR	READ CLOCK	IOS00285
012621	100005	2343	00	000	8936	SZN	.WEMRT, P.I0Q	IS THIS THE FIRST TIME	IOS00290
012622	012631	6002	00	010	8937	TZE	TNOT	YES	IOS00295
012623	100005	1363	00	000	8938	SBLQ	.WEMRT, P.I0Q	NO, GET DELTA TIME	IOS00300
012624	012643	1162	00	010	8939	CMPQ	THRTIM	IS TIME EXCESSIVE	IOS00305
012625	012632	6042	00	010	8940	TMI	TNOVER	NO	IOS00310
012626	400000	2352	03	000	8941	THROVR	LDA	.FBTO, DU	YES
012627	100003	2553	00	000	8942	ORSA	.WEPAD, P.I0Q	SET FOR PAGE REQUEST	IOS00320
012630	012632	7102	00	010	8943	TRA	TNOVER		IOS00325
012631	100005	7563	00	000	8944	TNOT	STQ	.WEMRT, P.I0Q	SAVE THRESHOLD TIME
012632	000006	1002	03	000	8945	TNOVER	CMPX0	SNDTHR, DU	TEST SECOND THRESHOLD
012633	012562	6056	00	010	8946	TPNZ	QAVIL	NOT REACHED YET	IOS00340
012634	000001	1062	03	000	8947	CMPX6	.PNPOF, DU	IT REQUESTOR POPM	IOS00345
012635	012562	6002	00	010	8948	TZE	QAVIL	YES, GIVE IT A TRY	IOS00350
012636	012640	7102	00	010	8949	TRA	NGETQ	NO, DENY REQUEST	IOS00355
					8950	*			IOS00360
012637	000000	6252	01	000	8951	EAX5	0, AU	RESET X5	IOS00365
		012640			8952	NGETQ	NULL		
012640	000000	6317	00	000	8953	EPPR	P1, 0, PO	RESTORE P1	ANON1020
012641	000000	6242	00	000	8954	EAX4	0	SET STATUS NOT ASSIGNED	
012642	000000	7102	15	000	8955	TRA	0, 5	RETURN	IOS00235
					8956	*			
					8957	*	DATA AREA		
					8958	*			
		000017			8959	FSTTHR	EQU	15	FIRST THRESHOLD COUNT
		000006			8960	SNDTHR	EQU	6	EMERGENCY THRESHOLD ONLY POP
		000055			8961	ECNTPP	EQU	1024/.LICES-1	TEMPORARY ENTRY COUNT IN ONE PAGE
012643	000046113200			000	8962	THRTIM	VFD	36/10*1000*1000	DENY REQUEST THRESHOLD TIME

SUBROUTINE ULINK

8964 *
8965 *
8966 *
8967 *
8968 *

SUBROUTINE ULINK

8969
8970 FUNCTION. TO UNLINK I/O ENTRY FROM PROCESS
8971 TO MANAGE THE SPACE(PAGE) OF I/O ENTRY SEGMENT
8972

8973 INPUT. X0 RETURN ADDRESS
8974 X4 I/O ENTRY ADDRESS
8975 X6 P.SSA
8976 X7 CPUNO
8977 ODR6 P.SSA
8978 ODR7 P.CR

8979
8980 OUTPUT. NONE
8981 A DESTROYED
8982

8983 NOTE.
8984 .CRQGT GATE IS CLOSED
8985

8986 INHIB ON
8987 *

012644	006013	4706	07	000	8988	ULINK	LDP	PO,SD,IOG,DL	GET IOG DESCRIPTOR	IOS00385
012645	000000	1042	03	000	8989		CMPX4	O,DU	IS X4 KOSHER	IOS04A5R
012646	012775	6002	00	010	8990		TZE	DBZOP	NO	IOS04A5R
012647	001761	4706	07	000	8991		LDP	PO,CTYP,DL		IOS00390
012650	013074	7402	17	010	8992		STXO	WSNXO,7	SAVE XRO	IOS00395
012651	000002	1043	00	000	8993		CMPX4	.WEEAD,,FO	IS ENTRY RESERVED	IOS00400
012652	000000	6046	10	000	8994		TMOZ	O,O	YES, DON'T UNLINK IT	EL8.
012653	000001	2353	14	000	8995		LDA	.WEPRV,4,PO	GET ENTRY STATUS	IOS0C410
012654	100000	3152	07	000	8996		CANA	.FFTYF,DL	IS IT A SYSTEM ENTRY	IOS00415
012655	012661	6002	00	010	8997		TZE	NENTRY	NO	IOS00420
012656	000000	6202	00	000	8998		EAXO	O		25FW0600
012657	600201	7403	00	000	8999		STXO	.SSYIC,,P.SSA	CLEAR SYSTEM I/O FLAG	25FW0610
012660	012714	7102	00	010	9000		TRA	PPRO		16FW0570
					9001	*				IOS00445
012661	000010	3152	07	000	9002	NENTRY	CANA	.FEXTM,DL	IS ENTRY EXTENDED	IOS00450
012662	012670	6002	00	010	9003		TZE	NXX1	NO, NORMAL	IOS00455
		012663			9004		EXTMEM	UNWLWS	UNWIRE WORKING SPACE	IOS00460
012663	006155	4706	07	000			LDP	PO,SD,EME,DL		
		012664					ICLIMB	.DRO,,EX,EAXO		
012664	000007713400			000			VFD	18/.EX,09/713,1/1,1/0,1/0,6/M.		
012665	000000601770			000			VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/.DRO		
012666	006013	4706	07	000	9005		LDP	PO,SD,IOG,DL	RESTORE PO	IOS00465
012667	001761	4706	07	000	9006		LDP	PO,CTYP,DL		IOS00470
					9007	*				IOS00475
					9008				UNLINK ENTRY FROM PROCESS CHAIN	IOS00480
	012670				9009	NXX1	NULL			IOS00485

SUBROUTINE ULINK

012670	000002	2353	14	000	9010	LDA	.WEPLK,4,PO	GET NEXT ENTRY, PRIOR ENTRY LINKS	IOS0C490
012671	012706	6002	00	010	9011	TZE	U1E	ONLY ENTRY	IOS0C495
012672	000000	6202	05	000	9012	EAXO	0,AL		IOS00500
012673	012705	6002	00	010	9013	TZE	UFE	IS FIRST ENTRY	IOS0C505
012674	777777	3152	03	000	9014	CANA	-1,DU		IOS0C510
012675	012702	6002	00	010	9015	TZE	ULE	IS LAST ENTRY	IOS0C515
012676	000002	4403	01	000	9016	SXLO	.WEPLK,AU,PO	MIDDLE ENTRY, RECHAIN PREVIOUS	IOS0C520
012677	000000	6202	01	000	9017	EAXO	0,AU		IOS0C525
012700	000002	7403	05	000	9018	STXO	.WEPLK,AL,PO	RECHAIN NEXT	IOS00530
012701	012707	7102	00	010	9019	TRA	PPROP		IOS0C535
					9020	*			IOS00540
012702	000000	6202	00	000	9021	ULE	EAXO	0	IOS00545
012703	000002	7403	05	000	9022	STXO	.WEPLK,AL,PO		IOS0C550
012704	012707	7102	00	010	9023	TRA	PPROP		IOS0C555
					9024	*			IOS0C575
012705	000002	4403	01	000	9025	UFE	SXLO	.WEPLK,AU,PO	SET NO PREVIOUS
012706	600007	5513	60	000	9026	U1E	STBA	.SNIO,60,P,SSA	LINK NEW HEAD (IF ANY)
					9027	*			IOS0C590
012707	600042	7203	00	000	9028	PPROP	LXLO	.SECNT,,P,SSA	ENTRY HOLD COUNT
012710	777777	6202	10	000	9029	EAXO	-1,0	-1	IOS0C600
012711	000002	6042	04	000	9030	TMI	2,IC	ERROR	16FW0590
012712	600042	4403	00	000	9031	SXLO	.SECNT,,P,SSA	OK	IOS0C610
012713	012772	0112	00	010	9032	NOP	DEBG	(TRA IF DEBUG OPTION SET (57=0))	EL8.
					9033	*			IOS00620
					9034			LINK ENTRY INTO AVAILABLE CHAIN	IOS0C625
012714	000000	6352	14	000	9035	PPRO	EAA	0,4	IOS0C630
012715	000012	7712	00	000	9036	ARL	10		IOS0C635
012716	000000	4503	14	000	9037	STZ	.WEST,4,PO	CLEAR STATUS	IOS00640
012717	000040	7203	01	000	9038	LXLO	.WOPEN,AU,PO	GET TAIL POINTER	IOS00645
012720	012732	6042	00	010	9039	TMI	PPIN	PAGE IS INACTIVE	IOS0C650
012721	000040	4443	01	000	9040	SXL4	.WOPEN,AU,PO	SET NEW TAIL	IOS0C655
012722	000001	7403	14	000	9041	STXO	.WEPRV,4,PO	SET PRIOR LINK	IOS00660
012723	000040	2363	01	000	9042	LDQ	.WOPEN,AU,PO	GET CHAIN ENDS	IOS00665
012724	777777	3762	03	000	9043	ANQ	-1,DU	IS THERE A CHAIN	IOS0C670
012725	012731	6012	00	010	9044	TNZ	PPIN-1	YES	IOS0C675
012726	000001	7563	14	000	9045	STQ	.WEPRV,4,PO	NO, CLEAR PRIOR	IOS0C680
012727	000040	7443	01	000	9046	STX4	.WOPEN,AU,PO	SET CHAIN HEAD	IOS00685
012730	012732	7102	00	010	9047	TRA	PPIN		IOS0C690
012731	000000	7443	10	000	9048	STX4	.WEST,0,PO	LINK AT TAIL	IOS00695
012732	000004	7203	00	000	9049	PPIN	LXLO	.WEECT,,PO	ENTRY COUNT
012733	000001	0202	03	000	9050	ADLXO	1,DU	INCREMENT IT	IOS0C705
012734	000004	4403	00	000	9051	SXLO	.WEECT,,PO	SAVE IT	IOS0C710
012735	000132	1002	03	000	9052	CMPXO	2*ECNTPP,DU	IS IT LARGE	IOS0C715
012736	012745	6032	00	010	9053	TRC	PPEX	YES	IOS0C720
012737	000007	4503	00	000	9054	STZ	.WERLT,,PO	NO, RESET RLSE TIME	IOS0C725
012740	013074	2202	17	010	9055	PPINA	LDXO	WSNXO,7	RESTORE XRO
012741	776000	3642	03	000	9056	ANX4	=0776000,DU	PAGE ORIGIN	IOS00735
012742	000001	3362	03	000	9057	LCQ	1,DU		IOS00740
012743	000004	0563	14	000	9058	ASQ	.WEECT,4,PO	DECREMENT PAGE USE COUNT	IOS00745
012744	000000	7102	10	000	9059	TRA	0,0	RETURN TO CALLER	IOS0C750

SUBROUTINE ULINK

012745	000003	2203	00	000	9060 *						IOS00755
012745	000003	2203	00	000	9061	PPEX	LDXO	.WEPAD,,PO	GET PAGE STATUS		IOS00760
012746	012765	6042	00	010	9062		TMI	PREQ	REQUEST IS OUTSTANDING		IOS00765
012747	040000	3002	03	000	9063		CANXO	.FBT3,DU	IS RLSE KNOWN		IOS00770
012750	012740	6012	00	010	9064		TNZ	PPINA	YES		IOS00775
012751	000007	2353	00	000	9065		LDA	.WERLT,,PO	NO, IS TIME ZERO		IOS00780
012752	012756	6012	00	010	9066		TNZ	PNZ	NO		IOS00785
012753	700040	4133	00	000	9067		RSCR	32,,P,CR	YES, SET T-0		IOS00790
012754	000007	7563	00	000	9068		STQ	.WERLT,,PO			IOS00795
012755	012740	7102	00	010	9069		TRA	PPINA			IOS00800
					9070 *						IOS00805
012756	700040	4133	00	000	9071	PNZ	RSCR	32,,P,CR	YES, GET TIME		IOS00810
012757	000007	1363	00	000	9072		SBLQ	.WERLT,,PO	THEN DELTA TIME		IOS00815
012760	000074	1162	03	000	9073		CMPQ	15*4,DU	HAS IT BEEN 15 SEC		IOS00820
012761	012740	6022	00	010	9074		TNC	PPINA	NO		IOS00825
012762	040000	2202	03	000	9075		LDXO	.FBT3,DU	YES		IOS00830
012763	000003	2403	00	000	9076		ORSXO	.WEPAD,,PO	SET PAGE RELEASE WANTED		IOS00835
012764	012740	7102	00	010	9077		TRA	PPINA			IOS00840
					9078 *						IOS00845
012765	100000	3602	03	000	9079	PREQ	ANXO	.FBT2,DU	IS REQUEST UNDER WAY		IOS00850
012766	012740	6012	00	010	9080		TNZ	PPINA	YES, CANT HELP IT		IOS00855
012767	000003	7403	00	000	9081		STXO	.WEPAD,,PO	NO, CANCEL IT		IOS00860
012770	000006	4503	00	000	9082		STZ	.WEMRC,,PO	CLEAR COUNT		IOS00865
012771	012740	7102	00	010	9083		TRA	PPINA			IOS00870
					9084 *						IOS00875
					9085 *			CHAIN HANDLING DEBUG CODE			IOS00880
					9086 *						IOS00885
012772	000004	6012	04	000	9087	DEBG	TNZ	4,IC	.SECNT >0		EL8.
012773	600007	2203	00	000	9088		LDXO	.SNIO,,P,SSA	.SECNT=0, IS .SNIO ZERO		IOS00895
012774	012714	6002	00	010	9089		TZE	PPRO	YES		IOS00900
		012775			9090	DBZOP	ZOP	9			XXXX3610
012776	000000	6352	10	000	9091		EAA	0,0			IOS00910
012777	600007	2203	00	000	9092		LDXO	.SNIO,,P,SSA	GET .SNIO		IOS00915
013000	012775	6002	00	010	9093		TZE	DBZOP	IS ZERO, TILT		IOS00920
013001	000001	1352	03	000	9094		SBLA	1,DU	REDUCE CHAIN COUNT		IOS00925
013002	000002	2203	10	000	9095		LDXO	.WEPLK,0,PO	WALK CHAIN		IOS00930
013003	777776	6012	04	000	9096		TNZ	-2,IC	MORE YET		IOS00935
013004	000000	1152	03	000	9097		CMPA	0,DU	END, IS CHAIN KOSHER		IOS00940
013005	012714	6002	00	010	9098		TZE	PPRO	YES		IOS00945
013006	012775	7102	00	010	9099		TRA	DBZOP	NO, TILT		IOS00950

SUBROUTINE GETWSN

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SUBROUTINE GETWSN
FUNCTION. TO GET WORKING SPACE NUMBER BY KPX
INPUT. X0 RETURN ADDRESS
X6 KFX
X7 CPUNO
A/Q ORIGINAL DESCRIPTOR IMAGE
OUTPUT. A WORKING SPACE NUMBER
ODRO DESTROYED

9116 INHIB ON
9117 *
9118 *

Table with columns for address, data, and labels. Includes entries like 013007, 013007, 013007, 013010, 013011, 013012, 013013, 013014, 013015, 013016, 013017, 013020, 013021, 013022, 013023, 013024, 013025, 013026, 013027, 013030, 013031, 013032, 013033, 013034, 013035, 013036, 013037, 013040, 013041, 013042.

SUBROUTINE GETWSN

013043	000011	7372 00	000	9151	LLS	9	4	11FW0370
013044	000022	7372 00	000	9152	LLS	18	5	11FW0380
013045	000033	7372 00	000	9153	LLS	27	6	11FW0390
013046	000044	7372 00	000	9154	LLS	36	7	11FW0400
				9155 *				11FW0410
013047	000000000000		000	9156 WSNW	OCT	0,0,0,0	TEMP STORE	11FW0420
013050	000000000000		000					
013051	000000000000		000					
013052	000000000000		000					

SUBROUTINE ADESC

9158 *
9159 *
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9162 *
9163 *

SUBROUTINE ADESC

9164
9165 FUNCTION. TO GET ABSOLUTE(TYPE=02,03) DESCRIPTOR
9166 INPUT. X0 RETURN ADDRESS
9167 X4 I/O ENTRY ADDRESS
9168 X6 KPX
9169 X7 CPUNO
9170 ODR0 ORIGINAL DESCRIPTOR
9171 ODR1 P.IOQ (TYPE=00)
9172
9173 OUTPUT. ODR0 P.SSA (TYPE=02)
9174 A/Q DESTROYED
9175
9176 NOTE. I/O ENTRY WORD .WEEND, .WEEND+1 DESTROYED
9177

9178 INHIB ON

9179 *
9180 *

013053

013053	100024	0507	14	000	9181	ADESC	NULL		
013054	100024	2373	14	000	9182	STD	PO, .WEEND, 4, P.IOQ		IOSQ2600
013055	000016	3152	07	000	9183	LDAQ	.WEEND, 4, P.IOQ		IOSQ2605
013056	000000	6012	10	000	9184	CANA	=016, DL	IS T=0/1	11FW0440
013057	013074	7402	17	010	9185	TNZ	0, 0	NO, CAN'T HELP	11FW0450
013060	013011	7002	00	010	9186	STXD	WSNX0, 7	YES, SAVE RETURN	11FW0460
					9187	TSXD	WSNO	RETURN A=WS#	IOSQ2710
					9188	*			
013061	017761	3362	07	000	9189	LCQ	8192-15, DL	Q = 77777760017	
013062	100024	3563	14	000	9190	ANSQ	.WEEND, 4, P.IOQ	CLEAR FLAG BITS	
013063	000004	7352	00	000	9191	ALS	4		
013064	000002	2752	07	000	9192	ORA	=002, DL		
013065	100024	0553	14	000	9193	ASA	.WEEND, 4, P.IOQ	SET WSN AND TYPE (00-02/01-03)	
013066	006013	4706	07	000	9194	LDP	PO, SD, IOQ, DL	GET TYPE 01 IOQ DESCRIPTOR	11FW1030
013067	177777	2202	03	000	9195	LDXO	=0177777, DU		
013070	100025	3403	14	000	9196	ANSXD	.WEEND+1, 4, P.IOQ	CLEAR QUARTER OF BASE // COMPLETE	
013071	013074	2202	17	010	9197	LDXO	WSNX0, 7	RESTORE XO	11FW1050
013072	000024	6707	14	000	9198	LDD	PO, .WEEND, 4, PO	GET ABSOLUTE P.SSA	
013073	000000	7102	10	000	9199	TRA	0, 0	RETURN	
					9200	INHIB	OFF		

9201 *
9202 * DATA AREA
9203 *

013074

013074	000000	000000	000	000	9204	WSNX0	NULL		
013075	000000	000000	000	000	9205	ZERO	0	FOR CPUNO 0	
013076	000000	000000	000	000	9206	ZERO	0	1	
					9207	ZERO	0	2	

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I/O SUPERVISOR

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PAGE 232

SUBROUTINE ADESC

013077 000000 000000 000 9208 ZERO 0

3

SUBROUTINE FNDFC

9210 *
9211 *
9212 *
9213 *

SUBROUTINE FNDFC

9214
9215
9216 FUNCTION. TO FIND FILE CODE IN PAT POINTER LIST

9217
9218 INPUT. X0 RETURN ADDRESS
9219 X6 KPX
9220 X7 CPUNO
9221 A FLAG AND FILE COD BIT 30-35
9222 BIT 0 =0, FROM CALLIO
9223 =1, FROM GEINCS

9224 ODR6 P.SSA
9225 ODR7 P.CR

9226
9227 OUTPUT. X2 PAT POINTER
9228 ODR2 PH.PAT
9229 X1/A DESTROYED
9230 ODR0 DESTROYED

9231
9232 NOTE.
9233 RETURN TRA 0,0 NORMAL
9234 TRA 1,0 ERROR FILE CODE NOT FOUND

013100

013100	006204	4724	07	000	9237	FNDFC	NULL			
013101	014077	3750	00	010	9238		LDP	P2,SD,PSH,DL	GET PUSH SEGMENT	29FW1230
013102	200002	6725	00	000	9239		ANA	=077777733777	DROP SYSOUT & RLSD BITS	IOS02720
013103	007777	3150	07	000	9240		LDD	P2,PH,PAT,,P2	GET PAT SEGMENT	29FW1250
013104	000000	6000	11	000	9241		CANA	=07777,DL	IS FILE CODE NULL	16FWC840
013105	200003	2221	00	000	9242		TZE	0,1	YES, PUNT	16FW0850
013106	200000	1221	00	000	9243		LDX2	.PTPPT,,P2		IOS02730
013107	200000	2361	00	000	9244		SBLX2	.PNPAT,,P2	GET PAT ORIGIN	IOS02735
013110	777400	3160	03	000	9245		LDQ	.PNPAT,,P2	# FILES	IOS02740
013111	013134	6010	00	010	9246		CANQ	=0777400,DU	ARE THERE 256 FILES	IOS02745
013112	000012	7360	00	000	9247		TNZ	FPART	YES	IOS02750
013113	000100	6200	02	000	9248	FNORM	QLS	10	NO, FORM RPT COUNT	IOS02755
013114	450000	3360	07	000	9249		EAXO	64,QU	RPT COUNT + TZE FLAG	IOS02760
013115	000000	5202	01	000	9250		LCQ	=0450000,DL	FILE CODE MASK (777777330000)	IOS02765
013116	200001	2111	12	000	9251		RPTX	0,1	SCAN PAT FOR FILE	IOS02770
013117	013122	6064	00	010	9252		CMK	1,2,P2		IOS02775
013120	777777	6220	12	000	9253		TTN	NOMCH	NOT FOUND	IOS02780
013121	000001	7100	11	000	9254	FOUN	EAX2	-1,2	GOT IT, ADJUST X2	IOS02785
					9255		TRA	1,1	TAKE GOOD EXIT	IOS02790
					9256	*				IOS02795
013122	400000	3150	03	000	9257	NOMCH	CANA	.FBTO,DU	IS THIS CALLIO ENTRY	IOS02800
013123	000000	6000	11	000	9258		TZE	0,1	YES, TAKE ERROR EXIT	IOS02805
013124	001515	2110	07	000	9259		CMK	=01515,DL	NO, IS I/O INTERCOM FILE	IOS02810

SUBROUTINE FNDFC

013125	000000	6010	11	000	9260	TNZ	0,1	NO	IOS02815
013126	600043	2361	00	000	9261	LDQ	.SELVL,,P.SSA		IOS02820
013127	010000	2760	07	000	9262	ORQ	.FBT23,DL		IOS02825
013130	600012	7561	56	000	9263	STQ	.SSA,ID,P.SSA	MAKE STACK ENTRY	IOS02830
					9264 *				
		013131			9265	.GOTO	.MSCM1,1	YES, CALL INTER-COM PROCESSOR	
						INHIB	SAVE,ON		
013131	000002	6306	04	13133		EPPRO	++2,\$		
013132	700010	7103	00	000		TRA	.CRGTC,,P.CR		
013133	000540	000001		000		ZERO	.MSCM1,1		
						INHIB	RESTORE		
					9266		256 OR MORE FILES IN PAT		CALL8645
013134	000377	3160	03	000	9267	FPART	CANQ	=0377,DU	IS IT 0 MOD 256
013135	000003	6010	04	000	9268	TNZ	3,IC		NO
013136	000400	1360	03	000	9269	SBLQ	256,DU		YES, ADJUST COUNT
013137	013112	6000	00	010	9270	TZE	FNORM		EXACTLY 256
013140	000010	7720	00	000	9271	QRL	8		
013141	013147	7520	60	010	9272	STCQ	FTIMS,60		SET RPT TIMES
013142	777777	6220	12	000	9273	EAX2	-1,2		ADJUST INDEX
013143	450000	3360	07	000	9274	LCQ	=0450000,DL		CMK MASK
013144	000300	5202	01	000	9275	FLOOP	RPT	0,1,TZE	SCAN 256 FILES
013145	200000	2111	12	000	9276	CMK	0,2,P2		
013146	013120	6070	00	010	9277	TTF	FOUN		FOUND IT
013147	000000	2200	03	000	9278	FTIMS	LDX0	** ,DU	GET TIMES
013150	777777	6200	10	000	9279	EAX0	-1,0		
013151	013147	7400	00	010	9280	STX0	FTIMS		-1
013152	013144	6010	00	010	9281	TNZ	FLOOP		DO NEXT 2256
013153	200000	2361	00	000	9282	LDQ	.PNPAT,,P2		RESTORE COUNT
013154	013112	7100	00	010	9283	TRA	FNORM		DO REMAINDER

SUBROUTINE DCWCK

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9286 *
9287 *
9288 *

SUBROUTINE DCWCK

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FUNCTION. LIST DCW VALIDATION

INPUT. X1 DCW POINTER
X2 RETURN ADDRESS
X4 I/O ENTRY ADDRESS
ODRO DCW HOLDING SEGMENT
ODR1 I/O ENTRY SEGMENT P.IOQ
.WEEND UPPER
BCUNDS OF SEGMENT

OUTPUT. X1 DCW POINTER
X0/A DESTROYED

NOTE. .STEMP+8 DESTROYED
INHIBITED CODING

INHIB ON

DCWCK NULL

LXLO .WEPRV,4,P.IOQ

CANXO .FFAUX,DU

TZE DCWPT

LDP PO,SD,PSH,DL

LDP PO,.CTYP,DL

LDXO PH.DCW,,FO

STXO .WEEND,4,P.IOQ

LDP PO,SD,PSH,DL

LDD PO,PH.DCW,,PO

TSXO PTRVL

LDQ .AC043,DL

TRA INABQ

DCWPT LDA 0,1,PC

CANA =0020000,DL

TZE 0,2

CANA =0010000,DL

TNZ 0,2

LDX1 0,1,PC

LDA 0,1,PO

TRA 0,2

INHIB OFF

TEST AUX
IS AUX REQUEST
NO, NORMAL CHECK
GET PUSH
CHANGE TYPE TO GET DCW BOUND
GET DCW SEGMENT BOUND
SET
GET DCW SEGMENT DESCRIPTER
CHECK DCW POINTER
K4 - INVALID DCW POINTER
INVALID DCWP, ABORT K4
GET DCW
TEST TDCW
NO, IOTD OR IOTP
TDCW OR IONTP
IONTP
GET DCW PTR
GET DCW
RETURN

EL8.

IOS04570
IOS00060
IOS00070
IOS00080
IOS00090
IOS00100
IOS00110

013155 100001 7203 14 000
013156 004000 3002 03 000
013157 013171 6002 00 010
013160 006204 4706 07 000
013161 001761 4706 07 000
013162 000034 2203 00 000
013163 100024 7403 14 000
013164 006204 4706 07 000
013165 000034 6707 00 000
013166 013370 7002 00 010
013167 000043 2362 07 000
013170 005373 7102 00 010
013171 000000 2353 11 000
013172 020000 3152 07 000
013173 000000 6002 12 000
013174 010000 3152 07 000
013175 000000 6012 12 000
013176 000000 2213 11 000
013177 000000 2353 11 000
013200 000000 7102 12 000

SUBROUTINE ULNK

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9333 *
9334 *
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SUBROUTINE ULNK

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FUNCTION. UNLINK ROUTINE TO UNLINK I/O ENTRY FROM CHANNEL QUEUE AND DECREMENT LINKED AND IN TRANSMISSION QUEUE COUNT.

INPUT. A MASK TO RESET STATUS IN I/O ENTRY
Q NEW STATUS I/O ENTRY
X0 RETURN ADDRESS
X1 AMOUNT IN TRANSMISSION COUNT TO BE DECREMENTED (0 OR 1)
X2 LOGICAL CHANNEL INDEX
X4 I/O ENTRY ADDRESS
X6 KPX
X7 CPUNO
ODR1 I/O ENTRY SEGMENT
ODR6 P.SSA
ODR7 P.CR

OUTPUT. A DESTROYED
Q DESTROYED
X3 DESTROYED
ODR0 DESTROYED

NOTE. .CRQGT IS STILL SHUT

INHIB ON

013201

013201 000000 1042 03 000
013202 012775 6002 00 010
013203 013225 7412 00 010
013204 100000 2213 14 000
013205 100001 2233 14 000
013206 013244 6002 00 010
013207 100000 7413 13 000

ULNK

9364
9365
9366
9367
9368
9369
9370
9371

NULL
CMPX4 O,DU
TZE DBZOP
STX1 DEXMS
LDX1 .WEST,4,F.IOQ
LDX3 .WEPRV,4,P.IOQ
TZE UNLKF
STX1 .WEST,3,F.IOQ

IS X4 KOSHER
NO
SAVE AMOUNT TO DECREMENT IN TRANSMISSION COUNT
NEXT ENTRY , PREVIOUS ENTRY ENTRY IS FIRST IN QUEUE
SET FORWARD POINTER IN PREVIOUS ENTRY

IOS04A5R
IOS04A5R

013210

013210 000000 1012 03 000
013211 013253 6002 00 010
013212 100001 7433 11 000

UNLK1

9372 *
9373
9374
9375
9376

NULL
CMPX1 O,DU
TZE UNLKL
STX3 .WEPRV,1,P.IOQ

ENTRY IS LAST IN QUEUE
SET BACKWARD POINTER IN NEXT ENTRY

013213

013213 777777 3762 07 000
013214 100000 3553 14 000
013215 100000 2563 14 000
013216 400000 2352 03 000

UNLK2

9377
9378
9379
9380
9381

NULL
ANQ -1,DL
ANSA .WEST,4,F.IOQ
ORSQ .WEST,4,F.IOQ
LDA .FSLNK,DU

ISOLATE NEW STATUS FOR ENTRY
RESET CURRENT STATUS
SET NEW STATUS
IS LINKS REQUESTED,

SUBROUTINE ULNK

013217	100004	3153	14	000	9382	CANA	.WESCT,4,P.I0Q				
013220	013224	6002	00	010	9383	TZE	DECQCT		NO,		
013221	600017	7213	00	000	9384	LXL1	.STATE,,P.SSA		LINKS, RESET LINKS FLAG		
013222	777776	3612	03	000	9385	ANX1	=0777776,DU				
013223	600017	4413	00	000	9386	SXL1	.STATE,,P.SSA				
					013224	9387	DECQCT	NULL	DECREMENT .SRQCT		
013224	777777	2352	03	000	9388	LDA	-1,DU		DECREMENT LINKED COUNT		
013225	000000	1352	07	000	9389	DEXMS	SBLA	** ,DL	TRANSMISSION COUNT		
013226	600160	0353	00	000	9390	ADLA	.SRQCT,,P.SSA		NEW COUNT		16FW0610
013227	013277	6042	00	010	9391	TMI	ZOP17		NEGATIVE LINK COUNT		16FW0620
013230	600160	7553	00	000	9392	STA	.SRQCT,,P.SSA		OK,STORE IT		16FW0630
013231	000000	6352	05	000	9393	EAA	0,AL		IN-TRANSMISSION		16FW0640
013232	600160	1153	00	000	9394	CMPA	.SRQCT,,P.SSA		COMPARE WITH LINKED		16FW0650
013233	013277	6056	00	010	9395	TPNZ	ZOP17		IN-TRANS GREATER...ERROR		16FW0660
					013234	9396	CHKOK	NULL			
013234	013225	2212	00	010	9397	LDX1	DEXMS				
013235	000000	6002	10	000	9398	TZE	0,0		CALL WAS FROM EP#32 UNLINK -- NO		
					9399	*			SPECIAL I/O TO BE LINKED		
					9400	*			RETURN TO CALLER		
013236	013262	0112	00	010	9401	QCHK	NOP	CHECK	(TSX3 IF 57=0)		IOS04AAM
					9402	*					
013237	100004	2353	14	000	9403	LDA	.WESCT,4,P.I0Q				
013240	000001	3752	07	000	9404	ANA	.FSCMS,DL		GET SPECIAL COMMAND FLAG		
013241	100004	6553	14	000	9405	ERSA	.WESCT,4,P.I0Q		TURN OFF		
013242	000000	6212	05	000	9406	EAX1	0,AL		PUT FLAG INTO X1 BIT17		
013243	000000	7102	10	000	9407	TRA	0,0		RETURN TO CALLER		
					9408	*					
					9409	*			STORE FORWARD POINTER		
					013244	9410	UNLKF	NULL			
013244	777777	3162	03	000	9411	CANQ	-1,DU		IS I/O QUEUE REQUEST		
013245	013250	6012	00	010	9412	TNZ	UNLKFC		NO, CC QUEUE		
013246	701401	7413	12	000	9413	STX1	.CRCT2,2,P.CR		I/O ENTRY FIRST POINTER		
013247	013210	7102	00	010	9414	TRA	UNLK1				
					9415	*					
					013250	9416	UNLKFC	NULL			
013250	006133	4706	07	000	9417	LDP	PO,SD,KL,DL				
013251	000050	7413	00	000	9418	STX1	.KLSCC,,PO		COURTESY CALL FIRST POINTER		
013252	013210	7102	00	010	9419	TRA	UNLK1				
					9420	*					
					9421	*			STORE LAST POINTER		
					013253	9422	UNLKL	NULL			
013253	777777	3162	03	000	9423	CANQ	-1,DU		IS I/O QUEUE REQUEST		
013254	013257	6012	00	010	9424	TNZ	UNLKLC		NO CC QUEUE		
013255	701402	7433	12	000	9425	STX3	.CRCT3,2,P.CR		I/O ENTRY LAST POINTER		
013256	013213	7102	00	010	9426	TRA	UNLK2				
					9427	*					
					013257	9428	UNLKLC	NULL			
013257	006133	4706	07	000	9429	LDP	PO,SD,KL,DL				
013260	000050	4433	00	000	9430	SXL3	.KLSCC,,PO		COURTESY CALL LAST POINTER		
013261	013213	7102	00	010	9431	TRA	UNLK2				

SUBROUTINE BLDCC

9459 *
9460 *
9461 *
9462 *
9463
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9470
9471
9472
9473
9474
9475
9476
9477
9478
9479
9480
9481
9482
9483
9484 *

SUBROUTINE BLDCC

FUNCTION. TO BUILD A ENTRY DESCRIPTOR FOR COURTESY CALL.

INPUT. X4 I/O ENTRY ADDRESS
X5 RETURN ADDRESS
X6 KPX
X7 CPUNO
ODR1 P. IOQ
ODR6 P. SSA
ODR7 P. CR

OUTPUT. TO BUILD ENTRY DESCRIPTOR IN A I/O ENTRY
WORD WEIOE.
A/Q DESTROYED
ODT0 DESTROYED
ODR3 DESTROYED

NOTE. PH.USL USED

					013307	9485 BLDCC	NULL	
013307	000160	2760	07	000	9486	ORQ	=0160,DL	
013310	100022	7561	14	000	9487	STQ	.WEIOE,4,P. IOQ	
013311	006204	4704	07	000	9488	LDP	PO,SD.PSH,DL	
013312	001761	4704	07	000	9489	LDP	PO,CTYP,DL	
013313	013323	2360	00	010	9490	LDQ	MSKDT	
013314	000013	3761	00	000	9491	ANQ	PH.USL+1,,PO	
013315	100023	7561	14	000	9492	STQ	.WEIOE+1,4,P. IOQ	
013316	000012	2361	00	000	9493	LDQ	PH.USL,,PO	
013317	003776	3760	03	000	9494	ANQ	=03776,DU	
013320	000007	7360	00	000	9495	QLS	7	
013321	100023	2561	14	000	9496	ORSQ	.WEIOE+1,4,P. IOQ	
013322	000000	7100	15	000	9497	TRA	0,5	RETURN
					9498 *			
					9499 *			
013323	000377777770			000	9500	MSKDT	OCT	000377777770

SUBROUTINE TYNAM

9502 *
 9503 *
 9504 *
 9505 *

SUBROUTINE TYNAM

9506

9507

9508

9509

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9520

9521

9522

9523

9524

9525

9526

9527

9528

9529

000002

9530 P.PAT

SET

2

PAT SEGMENT DESCRIPTOR

9531

INHIB

ON

9532 *

013324

9533 TYNAM

NULL

013324 200004 1013 00 000

9534

CMPX1

.PTOTY,,P.PAT

BEGINNING OF /T FILE

013325 000001 6022 10 000

9535

TNC

1,0

NOT TTY PAT

IOS06200

013326 200003 1013 00 000

9536

CMPX1

.PTPPT,,P.PAT

NOT TTY PAT

IOS06210

013327 000001 6056 10 000

9537

TPNZ

1,0

NOT TTY PAT

IOS06215

013330 200004 1213 00 000

9538

SBLX1

.PTOTY,,P.PAT

GET TYX OFFSET

IOS06220

013331 006140 4706 07 000

9539

LDP

PO,SD,SCN,DL

GET SYSTEM NAME TABLE

IOS06225

013332 637001 6352 11 000

9540

EAA

TY1,1

FORM TYX NAME

IOS06230

013333 000022 7712 00 000

9541

ARL

18

GET TABLE SIZE

IOS06235

013334 000000 2363 00 000

9542

LDQ

0,,PO

GET TABLE SIZE

IOS06240

013335 000004 7362 00 000

9543

QLS

4

SAVE RETURN ADDRESS

IOS06245

013336 600214 7403 00 000

9544

STX0

.STEMP+8,,P.SSA

GET RPT COUNT

IOS06250

013337 000100 6202 06 000

9545

EAX0

64,QL

MASK

IOS06255

013340 777777 2362 03 000

9546

LDQ

-1,DU

SCAN FOR NAME IN TABLE

IOS06260

013341 000000 6212 00 000

9547

EAX1

0

NOT THERE

IOS06270

013342 000000 5202 01 000

9548

RPTX

0,1

RESTORE RETURN ADDRESS

IOS06275

013343 000000 2113 11 000

9549

CMK

0,1,PO

013344 013350 6012 00 010

9550

TNZ

TYNOT

013345 600214 2203 00 000

9551

LDX0

.STEMP+8,,P.SSA

SUBROUTINE TYNAM

013346	077777	2213	11	000	9552	LDX1	-1,1,PO	GET DEVICE SCT ADDRESS	I0S06285	
013347	000000	7102	10	000	9553	TRA	0,0	TAKE CONSOLE RETURN	I0S06290	
					9554	*			I0S06295	
013350	000070	7162	00	010	9555	TYNOT	XEC	DEBUG	CHECK DEBUG MODE	EL8.
					9556		ZOP	18	16FWC790	
					013351				16FWC800	
013352	600214	2203	00	000	9557	LDX0	.STEMP+8,,P.SSA	GET RETURN LINKAGE	16FWC810	
013353	000001	7102	10	000	9558	TRA	1,0	CONSOLE NOT FOUND	I0S06305	
					9559		INHIB	OFF	I0S06310	
					637001	9560	TY1	BOOL	637001	TY1 BIAS
					9561					

SUBROUTINE ILPCX (CHECK SCT AND CALCULATE LPCX)

9563 *
 9564 *
 9565 *
 9566 *

SUBROUTINE ILPCX

9567
 9568
 9569
 9570
 9571
 9572
 9573
 9574
 9575
 9576
 9577
 9578
 9579

FUNCTION. CALCULATE LOGICAL PRIMARY CHANNEL INDEX
 CHECK SCT ADDRESS

INPUT. X0 RETURN ADDRESS
 X1 SCT ADDRESS
 ODR7 P.CR

OUTPUT. X1 SCT ADDRESS
 X2 LOGICAL PRIMARY CHANNEL INDEX
 A SCT ENTRY

NOTE. INHIBITED CODING
 RETURN
 RETURN 0 (0,0) ERROR
 RETURN 1 (1,0) OK

9584
 9585 INHIB ON
 9586 *

013354

013354 776400 6222 11 000
 013355 700000 2353 11 000
 013356 040000 3152 07 000
 013357 013362 6002 00 010
 013360 000000 6222 05 000
 013361 003774 3622 03 000
 013362 000000 1022 03 000
 013363 000003 6032 04 000
 013364 000140 3022 03 000
 013365 000001 6012 10 000
 013366 000114 2362 07 000
 013367 000000 7102 10 000

9587 ILPCX NULL
 9588 EAX2 -.CRCT1,1
 9589 LDA 0,1,P.CR
 9590 CANA .FPRCH,DL
 9591 TZE CKVLS
 9592 EAX2 0,AL
 9593 ANX2 .FCHNX,DU
 9594 CKVLS CMPX2 **,DU
 9595 TRC 3,IC
 9596 CANX2 =0140,DU
 9597 TNZ 1,0
 9598 LDQ .AC114,DL
 9599 TRA 0,0

LCX IF A PRIMARY CHANNEL
 SCT ENTRY
 IS THIS A PRIMARY CHANNEL
 YES
 NO
 TEST MAXIMAM SCT INDEX
 INVALID
 TEST OVERHEAD CHANNEL
 NO, SCT OK
 INVALID I/O SCT POINTER
 TAKE ERROR EXIT

EL8.

9600 *
 9601 INHIB OFF
 9602 *

SUBROUTINE PTRVL (BOUND VALIDATION)

9604 *
 9605 *
 9606 *
 9607 *

SUBROUTINE PTRVL

9608

9609

9610

9611

9612

9613

9614

9615

9616

9617

9618

9619

9620

9621

9622

9623

9624

9625 *

013370

9626 PTRVL

9627

9628

9629

9630

9631

9632

9633

9634

9635

9636

NULL

INHIB

CMPX1

TNC

TZE

STXD

LDXD

TNZ

LDXD

TRA

INHIB

ON

2,0

2,0

2,IC

2,0

**

-1,IC

2,0

OFF

FUNCTION. TO CHECK ANY POINTER VALIDITY

INPUT. X0 RETURN ADDRESS
 X1 RELATIVE POINTER
 X4 I/O ENTRY ADDRESS
 ODR1 P.IOQ
 .WEEND UPPER
 UPPER - BOUND

OUTPUT. NONE

NOTE. RETURN
 0,0 NOT VALID
 2,0 VALID

013370 100024 1013 14 000
 013371 000002 6022 10 000
 013372 000002 6002 10 000
 013373 000002 7402 04 000
 013374 100024 2203 14 000
 013375 000000 6012 00 000
 013376 777777 2202 04 000
 013377 000002 7102 10 000

IOS07175

IOS07185

IOS07190

IOS07195

IOS07200

IOS07205

IOS07210

TEST
 LEGAL
 LEGAL
 TEST 256K SEGMENT
 NO, INVALID
 YES, IT'S OK
 TAKE VALID RETURN

SUBROUTINE UNWIRE

9638 *
9639 *
9640 *
9641 *

SUBROUTINE UNWIRE

9642
9643 FUNCTION. UNWIRING WIRED SEGMENT
9644 RELEASE DCW IN DCW SEGMENT
9645 UN-LINK I/O ENTRY
9646 CALLED BY REQUEST HANDLER BEFORE BE ABORT

9647
9648 INPUT. X4 I/O ENTRY ADDRESS
9649 XO RETURN ADDRESS
9650 ODR1 P.IOQ
9651 ODR6 P.SSA
9652 ODR7 P.CR

9653
9654 OUTPUT. Q RETURN

9655
9656 NOTE. .SSA STACK USED

9657
9658 INHIB ON

				013400	9659 UNWIRE NULL		
013400	600012	7563	56	000	9660 STQ	.SSA, ID, P.SSA	SAVE ABORT CODE
013401	600012	7403	56	000	9661 STXO	.SSA, ID, P.SSA	SAVE RETURN ADDRESS
013402	100001	2353	14	000	9662 LDA	.WEPRV, 4, P.IOQ	GET ANY BIT
013403	040000	3152	07	000	9663 CANA	.FFDCW, DL	IS HOLD DCW IN DCW SEGMENT
013404	013420	6002	00	010	9664 TZE	UNW1	NO, NORMAL I/O REQUEST
013405	100007	2203	14	000	9665 LDXO	.WEOFF, 4, P.IOQ	GET DCW ADDRESS
013406	013420	6002	00	010	9666 TZE	UNW1	IS ZERO, DCW NOT HOLD YET
013407	006204	4706	07	000	9667 LDP	PO, SD, PSH, DL	
013410	000034	6707	00	000	9668 LDD	PO, PH, DCW, PO	GET DCW DESCRIPTOR
013411	777777	2352	03	000	9669 LDA	-1, DU	SET DCW WORD TO FREE
013412	000000	7553	10	000	9670 STA	O, O, PC	
013413	100001	7203	14	000	9671 LXLO	.WEPRV, 4, P.IOQ	
013414	001000	3002	03	000	9672 CANXO	.FFDD2, DU	
013415	013420	6002	00	010	9673 TZE	UNW1	
013416	100007	7203	14	000	9674 LXLO	.WEOFF, 4, P.IOQ	GET SECOND DCW ADDRESS
013417	000000	7553	10	000	9675 STA	O, O, PC	SET DCW FREE

9676 *

013420 9677 UNW1 NULL

9678

013420 9679 .SHUT .CRQGT, P.CR

013423 9680 .ULINK UN-LINK I/O ENTRY

013423 012644 7002 00 010 9681 TSXO ULINK

013424 9682 .OPEN .CRQGT, P.CR

013426 600012 2203 54 000 9683 LDXO .SSA, DI, P.SSA

013427 600012 2363 54 000 9684 LDQ .SSA, DI, P.SSA

9685 *

013430 9686 UWRET NULL

1245T 02 12-27-79 09.357

H6600J7.002

I/O SUPERVISOR

791219IOS0

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SUBROUTINE UNWIRE

013430 000000 7102 10 000

9687
9688

TRA 0,0
INHIB OFF

RETURN

SUBROUTINE IOCBCK

9690 *
9691 *
9692 *
9693 *

SUBROUTINE ICCBCK

9694
9695
9696
9697
9698
9699

FUNCTION. TO CHECK COMMAND BLOCK DESCRIPTOR AND ANY
INFORMATION.
(CALLED BY CALLIO PROCESSOR)

9700
9701
9702
9703
9704
9705

INPUT. X1 RETURN ADDRESS
X4 I/O ENTRY ADDRESS
ODR1 P.IOQ
X3 .FEPRV
OUTPUT XO/A/Q DESTROYED

9706
9707
9708
9709
9710
9711
9712

NOTE. COMMAND BLOCK ILLEGAL - ABORT
DESCRIPTOR TYPE ILLEGAL
SIZE ILLEGAL
PERMISSION ILLEGAL
.IWCBT BIT CONFIGURATION ILLEGAL

013431

013431 000000 6200 00 000
013432 000000 6350 02 000

9713 *
9714 IOCBCK NULL
9715 EAXO 0
9716 EAA 0,QU
9717 *

IOS02060
IOS02070
CALL8280

013433 000000011007 000
013434 000001 6200 10 000
013435 000001 7350 00 000
013436 013434 6054 00 010
013437 000000 6000 11 000
013440 013444 3160 10 010
013441 013434 6000 00 010
013442 000215 2360 07 000
013443 005373 7100 00 010

9718 CKAGN EEAXO 1,0
9719 ALS 1
9720 TPNZ CKAGN
9721 TZE 0,1
9722 CANQ IBSTB,0
9723 TZE CKAGN
9724 IBCNF LDQ .AC215,DL
9725 TRA INABQ

BUMP INDEX
TEST NEXT BIT
NOT ON
THATS ALL FOLKS
TEST BIT CONFIGURATION
VALID
K14 - INVALID IOCB FLAGS
ABORT

CALL8285
CALL8290
CALL8295
CALL8300
CALL8305
CALL8310
EL8.
CALL8320

012437

200003

9726
9727 URBST SET
9728 LRBST SET
9729

.IFRS1+.IFSR1+.IFRS2+.IFRS3+.IFRS4+.IFRS5+.IFRS6+.IFRS7
.IFRSB+.IFRSC+.IFL2T

29FW1020

013444

013444 777777777777 000
013445 412477200003 000
013446 412437200003 000
013447 412437200003 000
013450 412437200003 000
013451 777777777777 000
013452 413437200003 000
013453 777777777777 000

9730 IBSTB NULL
9731 VFD 18/-1,18/-1
9732 VFD 18/.IFTYP+.IFCNS+URBST,18/LRBST
9733 CTLMSK VFD 18/.IFTYP+URBST,18/LRBST
9734 VFD 18/.IFTYP+URBST,18/LRBST
9735 VFD 18/.IFTYP+URBST,18/LRBST
9736 VFD 18/-1,18/-1
9737 VFD 18/.IFTYP+.IFROD+URBST,18/LRBST
9738 VFD 18/-1,18/-1

.IFTYP
.IFCMD
.IFDD1
.IFDD2
.IFDDC
.IFRS1
.IFRLC
.IFSR1

IOS02210

SUBROUTINE IOCBCK

013454	416437200003	000	9739	VFD	18/.IFTYP+.IFRLC+URBST,18/LRBST	.IFROD
013455	777777777777	000	9740	VFD	18/-1,18/-1	.IFRS2
013456	412437200403	000	9741	VFD	18/.IFTYP+URBST,18/.IFAUX+LRBST	.IFDCW
013457	412437200003	000	9742	VFD	18/.IFTYP+URBST,18/LRBST	.IFSPC
013460	612437200163	000	9743	VFD	18/.IFTYP+.IFCMD+URBST,18/.IFPAT+.IFDNM+.IFPCD+LRBST	
			9744			.IFCNS
013461	777777777777	000	9745	VFD	18/-1,18/-1	.IFRS3
013462	777777777777	000	9746	VFD	18/-1,18/-1	.IFRS4
013463	777777777777	000	9747	VFD	18/-1,18/-1	.IFRS5
013464	777777777777	000	9748	VFD	18/-1,18/-1	.IFRS6
013465	777777777777	000	9749	VFD	18/-1,18/-1	.IFRS7
			9750			
013466	412437200003	000	9751	VFD	18/.IFTYP+URBST,18/LRBST	.IFIOE
013467	777777777777	000	9752	VFD	18/-1,18/-1	.IFL2T
013470	412437240003	000	9753	VFD	18/.IFTYP+URBST,18/.IFLKS+LRBST	.IFLKF
013471	412437300003	000	9754	VFD	18/.IFTYP+URBST,18/.IFLKF+LRBST	.IFLKS
013472	412437214003	000	9755	VFD	18/.IFTYP+URBST,18/.IFSYT+.IFTAD+LRBST	.IFGPR
013473	412437224003	000	9756	VFD	18/.IFTYP+URBST,18/.IFGPR+.IFTAD+LRBST	.IFSYT
013474	412437230003	000	9757	VFD	18/.IFTYP+URBST,18/.IFGPR+.IFSYT+LRBST	.IFTAD
013475	412437200003	000	9758	VFD	18/.IFTYP+URBST,18/LRBST	.IFABS
013476	412437200003	000	9759	VFD	18/.IFTYP+URBST,18/LRBST	.IFNAB
013477	412637200003	000	9760	VFD	18/.IFTYP+.IFDCW+URBST,18/LRBST	.IFAUX
013500	412437200143	000	9761	VFD	18/.IFTYP+URBST,18/.IFPAT+.IFDNM+LRBST	.IFSCT
013501	412477200243	000	9762	VFD	18/.IFTYP+.IFCNS+URBST,18/.IFSCT+.IFDNM+LRBST	.IFPAT
013502	412477200303	000	9763	VFD	18/.IFTYP+.IFCNS+URBST,18/.IFPAT+.IFSCT+LRBST	.IFDNM
013503	412477200003	000	9764	VFD	18/.IFTYP+.IFCNS+URBST,18/LRBST	.IFPCD
			9765	VFD	18/.IFTYP+.IFCNS+.IFDCW+.IFSPC+URBST,	.IFRS9
013504	412777634123	000	9766	ETC	18/.IFGPR+.IFSYT+.IFTAD+.IFIOE+.IFPAT+.IFPCD+LRBST	
013505	777777777777	000	9767	VFD	18/-1,18/-1	.IFRSA
013506	777777777777	000	9768	VFD	18/-1,18/-1	.IFRSB
013507	777777777777	000	9769	VFD	18/-1,18/-1	.IFRSC

EP #34 LKBYTE-SHARED ACCESS MPC LOCK BYTE REQUESTS

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9771 *
9772 *      INPUT REGISTERS
9773 *      A-REG  BITS 0-1      =1,LOCK
9774 *                               =2,UNLOCK
9775 *      BIT 2      =1,WAIT UNTIL LOCKED
9776 *      BIT 3      =1,ACCESS SECONDARY MPC
9777 *      BITS 4-8    UNDEFINED
9778 *      BITS 9-17   LOCK BYTE NUMBER
9779 *      BITS 18-20  CALLER ID
9780 *                               =0-ALLOCATION MODULES,GEPR
9781 *                               =1-FMS
9782 *                               =2-SYSTEM SCHEDULER
9783 *                               =3-GEOT
9784 *                               =4-LOCK BYTE ABSOLUTE
9785 *      BIT 21     =1, VIRTUAL LOCK BYTE CLEAR
9786 *      BIT 22     UNDEFINED
9787 *      BITS 23-33 SECONDARY SCT (ALC MODULES,GEPR,HEALS)
9788 *      BITS 34-35 UNDEFINED
9789 *
9790 *      ODR2      COMMAND BLOCK DESCRIPTOR
9791 *      ODR4      ENTRY DESCRIPTIR FOR COURTESY CALL
9792 *
9793 *      ROUTINE RETURNS
9794 *      Q-REG  BITS 30-35 =01 INVALID PARAMETER(S)
9795 *                               =02 L/B I/O TEMPORARILY STOPPED
9796 *
9797 *      CALLING SEQUENCE
9798 *      .CALL .MIOS,34
9799 *      TRA  DENIAL
9800 *      (GOOD RETURN)
9801 *
000002 9802 P. STAT SET      2      I/O COMMAND BLOCK DESCRIPTOR
000004 9803 P. CC  SET      4      ENTRY DESCRIPTOR FOR COURTESY CALL
000005 9804 P. KL  SET      5      KL SEGMENT DESCRIPTOR
000000 9805 ALCGPR BOOL 000000 ALLOCATION AND GEPR
100000 9806 FMS  BOOL 100000 FILE MANAGEMENT SUPERVISOR
200000 9807 SSCHED BOOL 200000 SYSTEM SCHEDULER
300000 9808 GEOT  BOOL 300000 GEOT
400000 9809 ABSLB BOOL 400000 LOCK BYTE ABS RATHER THAN VIRTUAL
600000 9810 LOKUNL BOOL 600000 LOCK/UNLOCK PARAMETER
700000 9811 CALLID BOOL 700000 CALLER ID
000377 9812 BYTEN0 BOOL 000377 LOCK BYTE NUMBER
200000 9813 LOCK  BOOL 200000 USER WANTS TO LOCK
400000 9814 UNLK  BOOL 400000 USER WANTS TO UNLOCK
100000 9815 WATE  BOOL 100000 USER WANTS TO WAIT
040000 9816 SCNDRY BOOL 040000 SECONDARY CONTROLLER
040000 9817 VCLEAR BOOL 040000 VIRTUAL LOCK BYTE CLEAR
013510 340000400001 000 9818 CWLB  OCT 340000400001 CONDITIONAL WRITE LOCK BYTE CMD
013511 140000400001 000 9819 WLB  OCT 140000400001 WRITE LOCK BYE CMD
9820 *      ZERO      MAX VIRTUAL L/B,TRUE ORIGIN

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EP #34 LKBYTE-SHARED ACCESS MPC LOCK BYTE REQUESTS

013512	000040	000237	000	9821	LOKTBL	ZERO	32,159	ALLOCATION/GEPR
013513	000041	000000	000	9822		ZERO	33,0	FMS
013514	000017	000042	000	9823		ZERO	15,34	SYSTEM SCHEDULER
013515	000000	000074	000	9824		ZERO	0,60	GEOT
		013516		9825	LKBYTE	NULL		
				9826		INHIB	ON	
013516	600214	2353 00	000	9827	LDA	.STEMP+8,,P.SSA		INPUT PARAMETERS
				9828		INHIB	OFF	
013517	200004	7551 00	000	9829	STA	.IWST1,,P.STAT		SAVE CALLING PARAMS IN STATUS WORDS
				9830	*			
				9831	*			
				9832	*			VALIDATE INPUT PARAMETERS
013520	000000	6200 05	000	9833	EAXD	0,AL		X0(18-20)=CALLER ID
013521	700000	3600 03	000	9834	ANXD	CALLID,DU		CALLER ID
013522	500000	1000 03	000	9835	CMPXD	=0500000,DU		
013523	014035	6030 00	010	9836	TRC	INVAL		OUT OF LIMITS
013524	000000	1000 03	000	9837	CMPXD	ALCGPR,DU		
013525	013531	6000 00	010	9838	TZE	CKSCT		USE MAST CONT SCT FOR
013526	400000	1000 03	000	9839	CMPXD	ABSLB,DU		FMS, SSCHED AND GEOT
013527	013531	6000 00	010	9840	TZE	CKSCT		
013530	700463	2351 00	000	9841	LDA	.CRSSN,,P.CR		USE MASTER CONTROLLER SCT
		013531		9842	CKSCT	NULL		
013531	000000	6210 05	000	9843	EAX1	0,AL		SCT ADDRESS
013532	017774	3610 03	000	9844	ANX1	.FSCT1,DU		X1=SCT ADDRESS
013533	013354	7000 00	010	9845	TSXD	ILPCX		CALCULATE LPCX (X2)
013534	013362	7000 00	010	9846	TSXD	CKVLS		CHECK FOR VALID SCT
013535	014035	7100 00	010	9847	TRA	INVAL		BAD
013536	000000	0110 00	000	9848	NOP			
013537	200004	7201 00	000	9849	LXLD	.IWST1,,P.STAT		RELOAD PARAMETER 1 (LOWER)
013540	700000	3600 03	000	9850	ANXD	CALLID,DU		
013541	000000	1000 03	000	9851	CMPXD	ALCGPR,DU		
013542	013560	6000 00	010	9852	TZE	DVCNO		USE DEVICE NO. FOR ALC/GEPR
013543	400000	1000 03	000	9853	CMPXD	ABSLB,DU		
013544	013566	6000 00	010	9854	TZE	LOXOK		LOCK BYTE ALREADY ABS
013545	200004	2201 00	000	9855	LDXD	.IWST1,,P.STAT		
013546	000377	3600 03	000	9856	ANXD	BYTENC,DU		VIRTUAL LOCK BYTE NUMBER
013547	200004	2351 00	000	9857	LDA	.IWST1,,P.STAT		
013550	700000	3750 07	000	9858	ANA	CALLID,DL		CALLER ID
013551	000003	7350 00	000	9859	ALS	3		POSITION
013552	013512	1000 01	010	9860	LOKMAX	CMPXD	LOKTBL,AU	VALIDATE
013553	013555	6000 00	010	9861	TZE	LBBASE		OK
013554	014035	6030 00	010	9862	TRC	INVAL		BYTE NUMBER INVALID
013555	013512	7210 01	010	9863	LBBASE	LXL1	LOKTBL,AU	GET TRUE LOCK BYTE ORG
013556	200004	0411 00	000	9864	ASX1	.IWST1,,P.STAT		A-REG IN STATUS WORD 1
013557	013566	7100 00	010	9865	TRA	LOXOK		HAS TRUE LOCK BYTE
		013560		9866	DVCNO	NULL		
013560	700000	2351 11	000	9867	LDA	0,1,P.CR		SCT WORD 1
013561	007700	3750 03	000	9868	ANA	.FDVNC,DU		DEVICE NUMBER
013562	000006	7710 00	000	9869	ARL	6		POSITION
013563	200004	2551 00	000	9870	ORSA	.IWST1,,P.STAT		VIRTUAL LOCK BYTE COMPUTED

EP #34 LKBYTE-SHARED ACCESS MPC LOCK BYTE REQUESTS

013564	000000	6200	01	000	9871	EAXO	0, AU		
013565	013547	7100	00	010	9872	TRA	LOKMAX-3		
		013566			9873	LOXOK	NULL		
013566	200004	2351	00	000	9874	LDA	.IWST1, P. STAT	TEST LOCK/UNLOCK CODE	
013567	600000	3750	03	000	9875	ANA	LOKUNL, DU		
013570	014035	6000	00	010	9876	TZE	INVAL	NONE SPECIFIED-ERROR	
013571	600000	6750	03	000	9877	ERA	=0600000, DU		
013572	014035	6000	00	010	9878	TZE	INVAL	BOTH SPECIFIED-ERROR	
					9879	*			
					9880	*		ALL PARAMETERS HAVE BEEN VALIDATED	
					9881	*		INPUT VIRTUAL LOCK BYTE NOW ABSOLUTE	
					9882	*		LOCK BYTE COMPUTED FOR ALLOCATION/GEPR	
					9883	*			
		013573			9884	GETAQ	NULL		
		013573			9885	.QUEUE			
013573	012477	7000	00	010		TSX0	QUEUE		
					9886	*			
013574	000000	0240	03	000	9887	ADLX4	0, DU		
013575	000000	0110	00	000	9888	NOP		PREVENT LOCKUP	IOSO4AAM
013576	000000	0110	00	000	9889	NOP			IOSO4AAM
013577	013573	6000	00	010	9890	TZE	GETAQ	TRY AGAIN	IOSO4AAM
013600	006013	4714	07	000	9891	LDP	P. IOQ, SD. IOQ, DL		
013601	001761	4714	07	000	9892	LDP	P. IOQ, CTYP, DL		
013602	100014	0525	14	000	9893	STD	P. STAT, WEICB, 4, P. IOQ		
013603	000000	6210	14	000	9894	EAX1	.WEST, 4		
013604	014041	7410	00	010	9895	STX1	VECDAT+1		
013605	014040	6754	00	010	9896	LDD	P5, VECDAT		
013606	100016	0555	14	000	9897	STD	P5, WEDRI, 4, P. IOQ		
013607	200004	2211	00	000	9898	LDX1	.IWST1, P. STAT	A-REG UPPER	
013610	000004	2350	07	000	9899	LDA	.FCCMM, DL	CCA OFFSET/PAY CC	
013611	100004	2551	14	000	9900	ORSA	.WESCT, 4, P. IOQ	MASTER MODE	
013612	400000	3010	03	000	9901	CANX1	UNLK, DU		
013613	013616	6010	00	010	9902	TNZ	UNLOCK	USER WANTS TO UNLOCK	
013614	013510	2350	00	010	9903	LDA	CWLB	CONDITIONAL WRITE LOCK BYTE CMD	
013615	013621	7100	00	010	9904	TRA	STOCMD	GO PUT IT AWAY	
		013616			9905	UNLOCK	NULL		
013616	000200	2350	07	000	9906	LDA	.FNABT, DL	DO NOT ABORT THIS I/O	
013617	100004	2551	14	000	9907	ORSA	.WESCT, 4, P. IOQ		
013620	013511	2350	00	010	9908	LDA	WLB	UNCONDITIONAL WRITE LOCK BYTE CMD	
		013621			9909	STOCMD	NULL		
013621	100006	7551	14	000	9910	STA	.WEICM, 4, P. IOQ		
013622	100011	7551	14	000	9911	STA	.WEFCM, 4, P. IOQ		
013623	000012	2350	03	000	9912	LDA	.WEFDC, DU	DCW POINTER	
013624	100007	7551	14	000	9913	STA	.WECFF, 4, P. IOQ		
013625	000013	6350	00	000	9914	EAA	.WEIOS		
013626	100012	7551	14	000	9915	STA	.WEFDC, 4, P. IOQ	SET DCW IN I/O ENTRY	
013627	100012	0541	14	000	9916	AOS	.WEFDC, 4, P. IOQ		
013630	100000	3010	03	000	9917	CANX1	WATE, DU	IGNORE COURTESY CALL ADDRESS	
013631	013633	6010	00	010	9918	TNZ	++2	IF USER WANTS TO WAIT	
013632	100022	0545	14	000	9919	STD	P. CC, WEIOE, 4, P. IOQ		

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013633	200004	2351	00	000	9920	LDA	.IWST1,,P.STAT	
013634	400000	3150	03	000	9921	CANA	UNLK,DU	
013635	013643	6010	00	010	9922	TNZ	INSBYT	
013636	000000	6360	16	000	9923	EAQ	0,6	KPX
013637	700463	2761	00	000	9924	ORQ	.CRSSN,,P.CR	SYSTEM ID
013640	000000	6360	02	000	9925	EAQ	0,QU	THROW AWAY LOWER HALF
013641	000002	7360	00	000	9926	QLS	2	FORMAT IT FOR THE MPC FIRMWARE
013642	100013	7561	14	000	9927	STQ	.WEIOS,4,P.IOQ	STORE IN ENTRY
		013643			9928	INSBYT	NULL	
013643	000377	3750	03	000	9929	ANA	BYTENC,DU	
013644	000012	7350	00	000	9930	ALS	10	BINARY FORMAT FOR THE MPC FIRMWARE
013645	100013	2551	14	000	9931	ORSA	.WEIOS,4,P.IOQ	
013646	200004	7201	00	000	9932	LXLO	.IWST1,,P.STAT	
013647	700000	3600	03	000	9933	ANXO	CALLID,DU	CALLER ID
013650	100000	1000	03	000	9934	CMPXO	FMS,DU	
013651	013654	6000	00	010	9935	TZE	INSSCT-2	USE MASTER CONTROLLER SCT
013652	200000	1000	03	000	9936	CMPXO	SSCHED,DU	
013653	013656	6010	00	010	9937	TNZ	INSSCT	USE SUBSYSTEM SCT
013654	700463	7201	00	000	9938	LXLO	.CRSSN,,P.CR	USE SCT FOR MASTER CONTROLLER
013655	013660	7100	00	010	9939	TRA	INSSCT+2	GO PUT IT AWAY
		013656			9940	INSSCT	NULL	
013656	701402	7201	12	000	9941	LXLO	.CRCT3,2,P.CR	SCT FOR THE FIRST DEVICE
013657	777774	6200	10	000	9942	EAXO	-4,0	BACK OFF TO THE CONTROLLER
013660	017774	3600	03	000	9943	ANXO	.FSCT1,DU	
013661	100004	2401	14	000	9944	ORSXO	.WESCT,4,P.IOQ	INSERT CONTROLLER SCT IN Q
013662	700001	2351	10	000	9945	LDA	1,0,P.CR	CONTROLLER SCT
013663	000374	3750	03	000	9946	ANA	=0374,DU	PRIMARY CONTROLLER NO.
013664	200004	2201	00	000	9947	LDXO	.IWST1,,P.STAT	
013665	040000	3000	03	000	9948	CANXO	SCNDRY,DU	DOES USER WANT SECONDARY
013666	013704	6000	00	010	9949	TZE	MPCX	PRIMARY CONTROLLER
013667	700410	6211	61	000	9950	EAX1	.CRCST,*AU,P.CR	USER WANTS SECONDARY CONTROLLER
013670	000004	2200	03	000	9951	LDXO	4,DU	ITERATION COUNT
		013671			9952	CMPMPC	NULL	
013671	014100	2360	00	010	9953	LDQ	=0777403777777	
013672	700000	2111	11	000	9954	CMK	0,1,P.CR	
013673	013700	6010	00	010	9955	TNZ	SECOND	
		013674			9956	NXTONE	NULL	
013674	000001	1200	03	000	9957	SBLXO	1,DU	
013675	014034	6000	00	010	9958	TZE	KILLQ	THERE IS NO SECONDARY CONT
013676	000001	0210	03	000	9959	ADLX1	1,DU	TRY IT AGAIN
013677	013671	7100	00	010	9960	TRA	CMPMPC	
		013700			9961	SECOND	NULL	
013700	700000	2361	11	000	9962	LDQ	0,1,P.CR	
013701	000374	3760	03	000	9963	ANQ	=0374,DU	SECONDARY CONTROLLER NO.
013702	013674	6000	00	010	9964	TZE	NXTONE	LOOK AT NEXT PSIA XBAR
013703	000000	6350	02	000	9965	EAA	0,QU	
		013704			9966	MPCX	NULL	
013704	000000	6200	01	000	9967	EAXO	0,AU	MPC NUMBER
013705	400000	2600	03	000	9968	ORXO	.FBTO,DU	PRESELECTED MPC FLAG
013706	100013	4401	14	000	9969	SXLO	.WEIOS,4,P.IOQ	SAVE IN ENTRY

EP #34 LKBYTE-SHARED ACCESS MPC LOCK BYTE REQUESTS

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9970 *
9971 * I/O QUEUE NOW CONSTRUCTED
9972 * SEE IF IT WILL REALLY FIRE
9973 *
013707 200004 2351 00 000 9974 LDA .IWST1,,P.STAT
013710 200000 3150 03 000 9975 CANA LOCK,DU WAS THIS A LOCK REQUEST
013711 013752 6000 00 010 9976 TZE QBILT NO
013712 006133 4754 07 000 9977 LDP P.KL,SD,KL,DL
013713 500115 2341 00 000 9978 SZN .KLLBT,,P.KL
013714 013752 6000 00 010 9979 TZE QBILT NO LOCK BYTE TABLE IMAGES
013715 100013 2351 14 000 9980 LDA .WEIOS,4,P.IOQ
013716 000374 3750 07 000 9981 ANA =0374,DL MPC #
013717 000026 7350 00 000 9982 ALS 4+18 TIMES 64 THEN INTO A-UPPER
013720 000000 6200 01 000 9983 EAXO 0,AU TRANSFER TO XO
013721 500115 0201 00 000 9984 ADLXO .KLLBT,,P.KL BEGINNING OF LOCK BYTE TABLE
013722 100013 2351 14 000 9985 LDA .WEIOS,4,P.IOQ FOR THIS MPC
013723 776000 3750 03 000 9986 ANA =0776000,DU LOCK BYTE #
013724 000014 7710 00 000 9987 ARL 10+2 RELATIVE WORD #
9988 INHIB ON
013725 600214 7553 00 000 9989 STA .STEMP+8,,P.SSA HOLD TEMPORARILY
013726 600214 0203 00 000 9990 ADLXO .STEMP+8,,P.SSA XO NOW HAS ABSOLUTE WORD
9991 INHIB OFF
013727 000000 6350 05 000 9992 EAA 0,AL
013730 000020 7710 00 000 9993 ARL 16 RIGHT JUSTIFY BYTE #
013731 377000 2360 03 000 9994 LDQ =0377000,DU BYTE CONTENTS MASK
013732 000001 1350 03 000 9995 SBLA 1,DU
013733 013736 6040 00 010 9996 TMI TSTBYT POSITION FOUND
013734 000011 7720 00 000 9997 QRL 9 POSITION TO REFERENCED BYTE
013735 013732 7100 00 010 9998 TRA *-3
013736 700000 3761 10 000 10000 013736 9999 TSTBYT NULL
013737 013752 6000 00 010 10001 ANQ 0,0,P.CR FIND OUT WHAT'S THERE
013740 200004 2351 00 000 10002 TZE QBILT IT'S PRESENTLY UNLOCKED
013741 100000 3150 03 000 10003 LDA .IWST1,,P.STAT
013742 013750 6000 00 010 10004 CANA WATE,DU DOES USER WANT TO WAIT
013743 701000 3761 10 000 10005 TZE S5304 NO
013744 702000 3761 10 000 10006 ANQ 512,0,P.CR
013745 703000 3761 10 000 10007 ANQ 1024,0,P.CR
013746 704000 3761 10 000 10008 ANQ 1536,0,P.CR
013747 013736 7100 00 010 10009 ANQ 2048,0,P.CR CACHE COLUMN CLEARED
TRA TSTBYT
013750 530402 2350 03 000 10010 013750 10010 S5304 NULL
013751 014026 7100 00 010 10011 LDA =0530402,DU GENERATE BYTE LOCKED
10012 TRA FAKEIT+1 OUT STATUS
10013 *
013752 200004 2351 00 000 10014 013752 10014 QBILT NULL
013753 700000 3750 07 000 10015 LDA .IWST1,,P.STAT
013754 000000 1150 07 000 10016 ANA CALLID,DL GET CALLER ID
013755 013764 6000 00 010 10017 CMPA ALCGPR,DL
013756 400000 1150 07 000 10018 TZE TSTSHR SHIP ALC/GPR ONLY IF SHRD DEV
10019 CMPA ABSLB,DL UNCONDITIONALLY SHIP

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EP #34 LKBYTE-SHARED ACCESS MPC LOCK BYTE REQUESTS

013757	013771	6000	00	010	10020	TZE	SHIPIT	ABS. LOCK BYTE I/O	
013760	700521	2351	00	000	10021	LDA	.CRFIG,,P.CR	SHIP THE REST IF WE ARE RUNNING	
013761	100000	3150	03	000	10022	CANA	.FSENV,DU	IN A SHARED ENVIRONMENT	
013762	013771	6010	00	010	10023	TNZ	SHIPIT		
013763	014025	7100	00	010	10024	TRA	FAKEIT		
		013764			10025	TSTSHR	NULL		
013764	200004	7201	00	000	10026	LXLO	.IWST1,,P.STAT		
013765	017774	3600	03	000	10027	ANXO	.FSCT1,DU		
013766	000010	2350	03	000	10028	LDA	.FNAST,DU		ANON2090
013767	700000	3151	10	000	10029	CANA	0,0,P.CR	SEE IF DEVICE IS SHARED	
013770	014025	6000	00	010	10030	TZE	FAKEIT	NO	
		013771			10031	SHIPIT	NULL		
013771	200004	2201	00	000	10032	LDXO	.IWST1,,P.STAT		
013772	400000	3000	03	000	10033	CANXO	UNLK,DU	IS THIS UNLOCK REQUEST	
013773	014002	6010	00	010	10034	TNZ	LINKIT	YES	
					10035	INHIB	ON		
		013774			10036	.SHUT	.CRSCT,,P.CR		
013777	600010	0543	00	000	10037	ACS	.SPASS,,P.SSA	REFLECT OUTSTANDING LOCK	
		014000			10038	.OPEN	.CRSCT,,P.CR		
					10039	INHIB	OFF		
		014002			10040	LINKIT	NULL		
014002	200004	2211	00	000	10041	LDX1	.IWST1,,P.STAT		
014003	200004	7231	00	000	10042	LXL3	.IWST1,,P.STAT		
					10043	*	.LINK	LINK IT UP	
014004	014006	6360	00	010	10044	EAQ	*+2	SET RETURN	IOS05360
014005	004024	7100	00	010	10045	TRA	LINK	LINK I/O	IOS05365
					10046	*			
014006	100000	3010	03	000	10047	CANX1	WATE,DU		
014007	014013	6010	00	010	10048	TNZ	GTSAT		29FW1070
		014010			10049	ALLDUN	NULL		
		014010			10050	.EXIT	1	SUCCESSFUL EXIT BACK TO USER	
						INHIB	SAVE,ON		
014010	000002	6306	04	14012		EPPRO	*+2,\$		
014011	700006	7103	00	000		TRA	.CREXT,,P.CR		
014012	000000	000001	000			ZERO	.RG,1		
						INHIB	RESTORE		
		014013			10051	GTSAT	NULL		
014013	200004	2351	00	000	10052	LDA	.IWST1,,P.STAT	GET THE STATUS	
014014	014020	6040	00	010	10053	TMI	CMPLTD	IT'S DONE	
		014015			10054	.ARELC		WAIT FOR IT	
		014015				.CALLX	.MDISP,4,N		
						INHIB	SAVE,CN		
		014015				ICLIMB	SD.SVX,,MDISP+64+4,EAXO		
014015	005704713400		000			VFD	18/.MDISP+64+4,09/713,1/1,1/0,1/0,6/M.		
014016	000000606122		000			VFD	1/0,9/0,8/0,1/.N,1/.0,2/0,2/0,12/SD.SVX		
						INHIB	RESTORE		
014017	014013	7100	00	010	10055	TRA	GTSAT	TRY AGAIN	
		014020			10056	CMPLTD	NULL		
014020	014101	3750	00	010	10057	ANA	=0370000770000	CHECK STATUS	
014021	014010	6000	00	010	10058	TZE	ALLDUN	CHANNEL READY	

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014022	200004	7411	00	000	10059	STX1	.IWST1,,P. STAT		
014023	200004	4431	00	000	10060	SXL3	.IWST1,,F. STAT		
014024	013573	7100	00	010	10061	TRA	GETAQ	RETRY THE I/O	
		014025			10062	FAKEIT	NULL		
014025	400002	2350	03	000	10063	LDA	=0400C02,DU	CHANNEL READY, INITIATE	
014026	100013	2361	14	000	10064	LDQ	.WEIOS,4,P.IOQ		
014027	776000	3760	03	000	10065	ANQ	=0776000,DU	LOCK BYTE NO.	
014030	000030	7720	00	000	10066	QRL	24	POSITION TO BITS 24-31	
014031	100012	2761	14	000	10067	ORQ	.WEEP2,4,P.IOQ	REFLECT IN STATUS WORD #2	
014032	003036	7000	00	010	10068	TSX0	STRET	RETURN STATUS TO USER	IOS06460
014033	014010	7100	00	010	10069	TRA	ALLDUN		
		014034			10070	KILLQ	NULL		
014034	100000	4501	14	000	10071	STZ	.WEST,4,P.IOQ	MARK QUEUE OPEN	
		014035			10072	INVAL	NULL		
014035	000001	2360	07	000	10073	LDQ	1,DL	INVALID PARAMETER(S)	
014036	012374	7100	00	010	10074	TRA	RLXIT	EXIT	EL8.
014037	00000001	1007		000					
014040	000025750640			000	10075	VECDATEVEC	SD.IOQ,,WEST,,LIOES,(R,W)		
014041	000000006013			000					

C O N S T A N T S

10077
10078
10079 LIT

014042	400077777777	000
014043	377700770000	000
014044	200000770000	000
014045	377777770000	000
014046	770000770077	000
014047	310000240002	000
014050	653124254617	000
014051	340000000002	000
014052	200000000020	000
014053	007774377777	000
014054	330000040002	000
014055	230000040001	000
014056	202020202020	000
014057	130000040002	000
014060	030000040001	000
014061	000005770000	000
014062	377763777777	000
014063	774000777777	000
014064	007777000077	000
014065	770000770076	000
014066	770000000077	000
014067	770000777777	000
014070	000077777700	000
014071	000077700000	000
014072	000077777770	000
014073	340000720000	000
014074	777777777700	000
014075	777777770000	000
014076	000777777000	000
014077	777777337777	000
014100	777403777777	000
014101	370000770000	000

P A T C H A R E A

				10081						
				10082						
014102	014102	0000 00	010	10083	PATCH	ARG	PATCH			
				10084	DUP	2,20				
				10085						
				10086			/SER#	/LOG#	/*****PATCH*****/	-----COMMENTS-
				10087			/	/	/XFR. FROM	CONTENTS
				10088						
014103	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014104	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014105	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014106	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014107	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014110	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014111	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014112	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014113	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014114	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014115	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014116	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014117	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014120	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014121	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014122	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014123	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014124	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014125	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10089						
014126	000000	000000	000	10089	ZERO	/	/	/	OCTAL	/
				10090 *						
				10091 *						

RDSP2760
RDSP2770

STATUS RETURN WORDS & DCW INSERT LISTS

	10188 *			EACH CONFIGURED PAYLOAD CHANNEL HAS AN EIGHT WORD BLOCK
	10189 *			ASSIGNED FROM THIS AREA. CRMB3 OF THE MAILBOX (SCW)
	10190 *			POINTS AT THE BEGINNING OF THIS BLOCK WHERE THE
	10191 *			TWO STATUS WORDS ARE STORED. FOLLOWING THE STATUS
	10192 *			WORDS ARE FOUR WORDS FOR THE DCW INSERT LIST (EXMB1-4),
	10193 *			FOLLOWED BY A COPY OF CCONNECT CHAN. PCW WD#2 AT EXMB5,
	10194 *			FOLLOWED BY A ONE WORD SEEK ADDRESS DATA WORD AT EXMB6.
	10195 *			
014250	10196 *			
	10197	BSS	768	MAXIMUM SYSTEM WITH 4 IOM'S AND
	10198 *			ALL PAYLOAD CHANNELS CONFIGURED
	10199 *			
015650	10200	BSS	64	MAX. SYSTEM WITH PSI CHANNELS CONFIGU
	10201 *			ON EACH IOM AND SPECIAL INTERRUPT
	10202 *			QUEUES OF 16 WORDS EACH

INITIALIZATION OF .MICS

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10204 * THIS CODE IS USED ONLY DURING START-UP.
10205 * THE ROUTINE IS CALLED BY STARTUP VIA A TSX1 .IIOS
10206 * WHEN THE MODULE HAS BEEN LOADED.
10207 *
10208 * INPUT REGISTERS
10209 * X1= TRANSFER
10210 * ODR3= IOS MODULE SEGMENT DESCRIPTOR (TYPE=1)
10211 * ODR4= IOS MODULE SEGMENT DESCRIPTOR (TYPE=0)
10212 * ODR5= START-UP MODULE SEGMENT DESCRIPTOR (BASE=0)
10213 * ODR6= SYSTEM LINKAGE DESCRIPTOR
10214 * ODR7= .CR SEGMENT DESCRIPTOR
10215 *
10216 * RETURN VIA X1
10217 * AR=ADDRESS OF DEPENDENT MODULES/# ENTRIES(TALLY COUNT)
10218 * QR=PROCESS LAST ADDRESS+1 ,IN UPPER
10219 * FIRST AVAILABLE CELL AFTER MODULE ,IN LOWER
10220 * X1 ADDRESS MINUS 11 CONTAINS ADDRESS OF BEGINNING
10221 * OF TABLE OF ADDRESSES AND THE FOLLOWING WORD IS
10222 * TO BE STORED INTO THAT ADDRESS -- USED TO LOAD
10223 * MAILEOX SCW AND TO ZERO INITIAL DCW AREA
10224 *
000001 10225 INITSW SET 1
000000 10226 INITM1 SET 0
10227
000001 10228 PI.KL SET 1 KL SEGMENT DESCRIPTOR
000002 10229 PI.ABS SET 2 REAL MEMORY SEGMENT DESCRIPTOR
10230
015750 10231 INITM NULL BEGIN I/O SUPERVISOR INITIALIZATION
015750 006063 4724 07 000 10232 LDP PI.ABS,SC.RMS,DL GET REAL ADDRESS DESC.
015751 016432 6724 00 010 10233 LDD PI.ABS,ABVEC2 CHANGE TYPE
015752 006133 4714 07 000 10234 LDP PI.KL,SD.KL,DL GET .KL SEGMENT DESCRIPTOR
015753 016430 0544 00 010 10235 STD P4,DESCWK
015754 016431 2350 00 010 10236 LDA DESCWK+1 GET IOS MODULE BASE
015755 000020 7350 00 000 10237 ALS 18-2
015756 100113 7551 00 000 10238 STA .KLIOB,,PI.KL SET IOS MODULE BASE
015757 016430 0574 00 010 10239 STD P.CR,DESCWK
015760 016431 2350 00 010 10240 LDA DESCWK+1 GET .CR SEGMENT BASE
015761 000020 7350 00 000 10241 ALS 18-2
015762 016425 7550 00 010 10242 STA CRBASE SET .CR BASE
015763 000000 6200 01 000 10243 EAXO ,AU INITIALIZE CONNECT CHANNEL MBX
015764 010440 0400 00 010 10244 ASXD INITMB
015765 016430 2350 00 010 10245 LDA DESCWK
015766 016626 3750 00 010 10246 ANA =077777770000 ISOLATE BOUND
015767 001706 5510 60 010 10247 STBA BYPCR,60 SET BP.CR SIZE IOS06920
015770 001672 6350 00 010 10248 EAA EP1RET INTERRUPT HANDLER RETURN ADDRESS
015771 000013 7550 00 010 10249 STA ..IOS+11
015772 002200 6350 00 010 10250 EAA MAP FOR DNET EL8.
015773 000032 7550 00 010 10251 STA ..IOS+26 EL8.
015774 002240 6350 00 010 10252 EAA IMW FOR DNET EL8.
015775 000033 7550 00 010 10253 STA ..IOS+27 EL8.

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INITIALIZATION OF .MICS

10254 *

10255 *

10256

10257

FILE SYSTEM INITIALIZE

015776 700726 4501 00 000

STZ

.CRFSX,,P.CR

SET ZERO'S FOR FILSYS

10258

IN CASE PROTECTED FILES

10259

ARE NOT USED THIS SYSTEM

10260

10261

10262

INTERRUPT HANDLER INITIALIZE

10263 *

10264 *

IOS02840

015777 100140 2201 00 000

LDXO

.KLNIC,,FI.KL

10265

LDA

NMAP-1,0

GET MAP ADDRESS

016000 016433 2350 10 010

10266

016001 016016 6000 00 010

10267

TZE

ONEIO

MAP IS OK

016002 000002 7350 00 000

10268

ALS

2

GET BYTE ADDRESS

016003 000000 1004 01 000

10269

MLR

(,,AU)

SET MAP FOR # IOMS

016004 000000 0002 00 000

10270

ADSC9

0,0,32*4

016005 002200 0002 00 010

10271

ADSC9

MAP,0,32*4

016006 000000 6350 10 000

10272

EAA

0,0

NIOC

016007 000014 7350 00 000

10273

ALS

12

RPT COUNT

016010 000240 6220 01 000

10274

EAX2

160,AU

+ TNZ BIT

016011 000676 7420 00 010

10275

STX2

GTCHN4

SET RPT COUNT

016012 100140 2351 00 000

10276

LDA

.KLNIC,,PI.KL

016013 506203 2750 07 000

10277

ORA

=0506 203,DL

SET DIVIDE

016014 000711 7550 00 010

10278

STA

INTCV

016015 000000 6200 01 000

10279

EAXO

0,AU

NIOM TO XO

016016 000062 2340 00 000

10280

ONEIO

NULL

TEST MONITOR OPTION

016017 000003 6010 04 000

10281

SZN

MONOPT

NO

016020 002754 6200 00 010

10282

TNZ

3,IC

YES, SET TRA

016021 001672 7400 00 010

10283

EAXO

XTST

016022 000057 2340 00 000

10284

STXO

EP1RET

TEST DEBUG OPTION

016023 016035 6010 00 010

10285

SZN

BUGOPT

NO

016024 701200 2200 03 000

10286

LDXO

=07C1200,DU

YES, SET TSX1 IOCBCK

016025 005672 4400 00 010

10287

SXLO

CBKMON

016026 710200 2200 03 000

10288

LDXO

=0710200,DU

SET TRA

016027 012713 4400 00 010

10289

SXLO

PPRO-1

016030 703200 2200 03 000

10290

LDXO

=07C3200,DU

SET TSX3

016031 004270 4400 00 010

10291

SXLO

LOK

016032 013236 4400 00 010

10292

SXLO

QCHEK

016033 011203 2200 03 000

10293

LDXO

=0112C3,DU

NOP

016034 003051 4400 00 010

10294

SXLO

BUGSR

STATUS RETURN TRACE

10295

FAULT

CHANNEL PROCESSOR

016035 000000 2220 03 000

10296

LDX2

0,DU

016036 100133 2241 12 000

10297

INMB4

LDX4

.KLICN,2,PI.KL

016037 701007 2351 14 000

10298

LDA

.CRMB4+4,4,P.CR

016040 000000 6200 01 000

10300

EAXO

0,AU

GET HARDWARE DCW ADDRESS

016041 000634 7400 12 010

10301

STXO

MYMB4,2

STORE IN SOFT DCW ADDRESS

016042 000640 7400 12 010

10302

STXO

MYREF,2

AND IN REFRESHER

016043 000006 7350 00 000

10303

ALS

6

SHIFT WRD CNT TO TALLY

INITIALIZATION OF .MIOS

016044	016046	0420	00	010	10304	ASX2	**2	ADD IN IOM#
016045	016047	0420	00	010	10305	ASX2	**2	
016046	000634	7510	02	010	10306	STCA	MYMB4,02	STORE WRD CNT IN TALLY FIELD
016047	000640	7510	02	010	10307	STCA	MYREF,02	
016050	000001	0220	03	000	10308	ADLX2	1,DU	
016051	100140	1021	00	000	10309	CMPX2	.KLNIC,,PI.KL	HAVE ALL IOMS BEEN CHECKED
016052	016036	6020	00	010	10310	TNC	INMB4	NO, CONT MOVE
					10311 *			
					10312			
								CHSUB SUBROUTINE
016053	002341	6350	00	010	10313	EAA	CHSUB	ABSOLUTE ADDRESS OF THIS SUBROUTINE
016054	701403	7551	00	000	10314	STA	.CRCT4,,P.CR	SAVE TRANSFER ADDRESS FOR CHAN. MODS.
					10315 *			
					10316			LOST INTERRUPT CHECK
016055	001750	2360	07	000	10317	LDQ	MAXLC,DL	
016056	700430	7561	00	000	10318	STQ	.CRLIT,,P.CR	SET UP COUNT FOR LOST INTERRUPT CHECK
					10319			
					10320			
					10321			
					10322			S-2000 EMULATOR INITIALIZATION
016057	016423	7420	00	010	10323	STX2	ICM1	SAVE STU INT. VECTOR IMAGE FOR S-2000
					10324			
					10325			
					10326			
					10327			
					10328			INITIALIZE CACHE CODE TO CLEAR FOR MULTIPLE
					10329 *			PROCESSOR SYSTEMS
					10330 *			
016060	700271	2221	00	000	10331	LDX2	.CRNPC,,P.CR	GET # OF PROCESSORS CONFIGURED
016061	000001	1020	03	000	10332	CMPX2	1,DU	IS THIS A SINGLE PROCESSOR SYSTEM
016062	016066	6000	00	010	10333	TZE	INSCAN	YES, CACHE CLEAR CODE IS OK NOW
016063	011203	2350	07	000	10334	LDA	=0011203,DL	NO, GET REPLACEMENT INSTRUCTION
016064	003100	7550	00	010	10335	STA	INIT1	STORE INTO CODE
					10336 *			
					10337			
016065	001750	3360	07	000	10338	LCQ	MAXLC,DL	IOS04AAD
					10339			
					10340 *			SCAN IOM FOR CONFIGURED CHANNELS AND
					10341 *			A) DEVELOP MODULE LOAD LIST
								B) SETUP S.R. & EXMB1-6 WORDS FOR CHAN.
016066	014250	6270	00	010	10342	EAX7	IORG	FIRST AVAILABLE SPACE FOR STATUS TABL
016067	100113	0271	00	000	10343	ADLX7	.KLIOE,,PI.KL	ADD IOS BASE TO BUILD REAL ADDRESS
016070	016424	7470	00	010	10344	STX7	ISVQR	
016071	000000	2230	03	000	10345	LDX3	0,DU	IOM #0
					10346 *			
					10347			SET UP CHANNEL SURVEY
016072	100132	2241	00	000	10348	LDX4	.KLICL,,PI.KL	MAXIMUM CHANNEL NUMBER ON IOM
016073	100132	7251	00	000	10349	LXL5	.KLICL,,PI.KL	FIRST PAYLOAD CHANNEL ON IOM
016074	000001	7450	04	000	10350	STX5	1,IC	
016075	000000	1240	03	000	10351	SBLX4	**DU	TOTAL PAYLOAD CHANNELS
016076	000000	6350	15	000	10352	EAA	0,5	FIRST PAYLOAD CHANNEL
016077	000002	7350	00	000	10353	ALS	2	4 TIMES FIRST AVAIL PAYLOAD CHANNEL

INITIALIZATION OF .MICS

016100	000000	6250	01	000	10354	EAX5	0,AU	4 * CHANO (OMITTING OVERHEAD CHANS.)
016101	100133	0251	13	000	10355	ADLX5	.KLCIN,3,PI.KL	+384 * IOM # = CHANNEL INDEX
					10356 *			
					10357	IMOD2	NULL	
016102	701200	2351	15	000	10358	LDA	.CRIO1,5,P.CR	
016103	020000	3150	07	000	10359	CANA	=0200CO,DL	IS THIS CHANNEL CONFIGURED
016104	016154	6010	00	010	10360	TNZ	IMOD4	NO, MOVE TO NEXT CHANNEL
					10361 *			
					10362 *		THIS CHANNEL	IS CONFIGURED
					10363 *		INDEX #3 =	IOM #
					10364 *		INDEX #5 =	CHANNEL INDEX
					10365 *		INDEX #7 =	LOC. OF NEXT STATUS WORD PAIR
					10366 *			
					10367 *			
						SET UP 8 WORD S.R. &		EXMB1-6 BLOCK FOR THIS CHANNEL
016105	001002	6350	15	000	10368	EAA	.CRMB3,5	
016106	016425	0350	00	010	10369	ADLA	CRBASE	ADD .CR BASE TO BUILD REAL ADDRESS
016107	200000	7551	17	000	10370	STA	0,7,PI.ABS	ABS ADDR. OF SCW IN STATUS WORD #1
016110	000000	6350	17	000	10371	EAA	0,7	ABS ADDR. OF STATUS WORDS
016111	200001	7551	17	000	10372	STA	1,7,PI.ABS	PUT AWAY SCW FOR LATER STORE IN .CRMB
016112	000002	0670	03	000	10373	ADX7	2,DU	BUMP STATUS WORD LOCATION
016113	200000	7471	17	000	10374	STX7	0,7,PI.ABS	SET UP EXMB1-2, PUT ITS OWN ADDRESS I
016114	200001	4501	17	000	10375	STZ	1,7,PI.ABS	EXMB1 FOR ZEROING
016115	000002	0670	03	000	10376	ADX7	2,DU	BUMP STATUS WORD & EXMB1 LOCATION
016116	200000	7471	17	000	10377	STX7	0,7,PI.ABS	SET UP EXMB3-4, PUT ITS OWN ADDRESS
016117	200001	4501	17	000	10378	STZ	1,7,PI.ABS	IN EXMB3 FOR ZEROING
016120	000002	0670	03	000	10379	ADX7	2,DU	BUMP STATUS WORD & EXMB3 LOCATION
016121	200000	7471	17	000	10380	STX7	0,7,PI.ABS	SET UP EXMB5-6, PUT ITS OWN ADDRESS
016122	200001	4501	17	000	10381	STZ	1,7,PI.ABS	IN EXMB5 FOR ZEROING
016123	000002	0670	03	000	10382	ADX7	2,DU	BUMP TO NEXT AVAILABLE SPACE
					10383 *			
					10384 *		MAKE SURE DEVICE ON THIS	CHANNEL IS IN MODULE LOAD LIST
016124	016537	6220	00	010	10385	EAX2	TABLE	BEGIN OF CHAN MODULE TABLE
016125	701400	2351	15	000	10386	LDA	.CRCT1,5,P.CR	
016126	016627	2360	00	010	10387	LDQ	=0777777777	
016127	072300	5202	01	000	10388	RPT	ETABL-TABLE,1,TZE	
016130	000000	2110	12	000	10389	CMK	0,2	
016131	000002	6000	04	000	10390	TZE	2,IC	MATCH
					10391	ZOP	10,DU	UNKNOWN DEVICE
					10392 *			
016133	016575	6260	00	010	10393	EAX6	MODLS	
016134	777777	7220	12	000	10394	LXL2	-1,2	MODULE NO.
016135	016574	2360	00	010	10395	LDQ	MODCT	
016136	016145	6000	00	010	10396	TZE	IMABS	NO ENTRIES IN LIST
016137	000012	7360	00	000	10397	QLS	10	
016140	000100	6200	06	000	10398	EAX0	64,QL	TALLY + ZERO
016141	000000	5202	01	000	10399	RPTX	0,1	
016142	000000	1020	16	000	10400	CMPX2	0,6	
016143	016154	6000	00	010	10401	TZE	IMOD4	MODULE ALREADY IN LIST
016144	016574	2360	00	010	10402	LDQ	MODCT	
016145	016575	7420	06	010	10403	IMABS	STX2	MODLS,QL
					10403			STORE MODULE NO.

INITIALIZATION OF .MIOS

016146	016574	0540	00	010	10404	ACS	MODCT	
016147	000063	1020	03	000	10405	CMPX2	.MDNET,DU	IS REMOTE
016150	016154	6010	00	010	10406	TNZ	IMOD4	NO
016151	016574	0540	00	010	10407	AOS	MODCT	YES, COUNT MODULE # FOR .MROUT
016152	000533	6220	00	000	10408	EAX2	.MROUT	
016153	016576	7420	06	010	10409	STX2	MODLS+1,GL	STORE MODULE NUMBER .MROUT
					10410	*		
					10411	IMOD4	NULL	INCREASE THE CHANNEL NUMBER
016154	000001	1240	03	000	10412	SBLX4	1,DU	ARE THERE MORE CHANS. ON THIS IOM
016155	016160	6000	00	010	10413	TZE	PSIQ	NO, SET UP SPECIAL INTERRUPT QUEUE
016156	000004	0250	03	000	10414	ADLX5	4,DU	YES, MOVE TO THE NEXT CHANNEL
016157	016102	7100	00	010	10415	TRA	IMOD2	
					10416	*		
					10417	PSIQ	NULL	PUT IN THE SPECIAL INTERRUPT QUEUE SPACE
					10418	*		FOR CHANNEL #6 ON THIS IOM
016160	001030	6200	00	000	10419	EAX0	.CRMB1+24	
016161	100133	0201	13	000	10420	ADLX0	.KLICN,3,PI.KL	ABS. ADDR. OF CHAN.#6 ON THIS IOM
016162	016425	0200	00	010	10421	ADLX0	CRBASE	ADD .CR BASE TO BUILD REAL ADDRESS
016163	000002	6350	10	000	10422	EAA	2,0	POINTER TO CHAN.#6 REFRESH (.CRMB3)
016164	047777	2750	07	000	10423	ORA	=0047777,DL	ADD CONTROL BITS FOR CHAN.#6 LPW
016165	200001	7551	17	000	10424	STA	1,7,PI.ABS	STORE INTO STATUS WORD QUEUE
016166	200000	7401	17	000	10425	STX0	0,7,PI.ABS	ADDRESS TO STORE LPW INTO
016167	200003	7471	17	000	10426	STX7	3,7,PI.ABS	NEXT SPECIAL INTERRUPT POINTER
016170	000001	2350	03	000	10427	LDA	1,DU	
016171	200003	0551	17	000	10428	ASA	3,7,PI.ABS	MOVE NEXT POINTER AHEAD ONE
016172	200003	4471	17	000	10429	SXL7	3,7,PI.ABS	LAST SPECIAL INTERRUPT POINTER
016173	000001	6200	10	000	10430	EAX0	1,0	POINTERS FOR CHAN.#6 (.CRMB2)
016174	200002	7401	17	000	10431	STX0	2,7,PI.ABS	LOCATION WHERE POINTERS ARE TO BE STO
016175	000000	6350	17	000	10432	EAA	0,7	BEGINNING OF CHAN.#6 QUEUE
016176	000012	2750	07	000	10433	ORA	=10,DL	TALLY GIVING LENGTH OF QUEUE
016177	200005	7551	17	000	10434	STA	5,7,PI.ABS	CHAN.#6 REFRESH (.CRMB3)
016200	200007	7551	17	000	10435	STA	7,7,PI.ABS	CHAN.#6 DCW (.CRMB4)
016201	777777	2350	07	000	10436	LDA	-1,DL	
016202	200007	0551	17	000	10437	ASA	7,7,PI.ABS	INCREMENT POINTER & DECREMENT TALLY F
					10438	*		FIRST PSIA SPECIAL INTERRUPT
016203	000001	6200	10	000	10439	EAX0	1,0	POINTER TO .CRMB3
016204	200004	7401	17	000	10440	STX0	4,7,PI.ABS	
016205	000001	6200	10	000	10441	EAX0	1,0	POINTER TO .CRMB4
016206	200006	7401	17	000	10442	STX0	6,7,PI.ABS	
016207	000010	6270	17	000	10443	EAX7	8,7	FILLING OF CHAN.#6 MAILBOXES HAS BEEN
					10444	*		COMPLETED. MUST NOW LEAVE ENOUGH SPACE IN QUEUE.
					10445	*		
016210	200000	7471	17	000	10446	STX7	0,7,PI.ABS	
016211	200001	4501	17	000	10447	STZ	1,7,PI.ABS	NINTH & TENTH WORDS IN CHAN.#6 QUEUE
016212	000002	6270	17	000	10448	EAX7	2,7	
					10449	*		
016213	200000	7471	17	000	10450	STX7	0,7,PI.ABS	
016214	200001	4501	17	000	10451	STZ	1,7,PI.ABS	FIRST & SECOND QUEUE OVERFLOW WORDS
016215	000002	6270	17	000	10452	EAX7	2,7	
					10453	*		

INITIALIZATION OF .MICS

016216	200000	7471	17	000	10454	STX7	0,7,PI.ABS		
016217	200001	4501	17	000	10455	STZ	1,7,PI.ABS	THIRD & FOURTH QUEUE OVERFLOW WORDS	
016220	000002	6270	17	000	10456	EAX7	2,7		
					10457	*			
016221	200000	7471	17	000	10458	STX7	0,7,PI.ABS		
016222	200001	4501	17	000	10459	STZ	1,7,PI.ABS	FIFTH & SIXTH QUEUE OVERFLOW WORDS	
016223	000002	6270	17	000	10460	EAX7	2,7		
					10461	*			
					10462	*			
							MOVE TO THE NEXT IOM		
016224	000001	0230	03	000	10463	ADLX3	1,DU	NEXT IOM NUMBER	
016225	100140	1031	00	000	10464	CMPX3	.KLNIC,,PI.KL	IS THERE ANOTHER IOM TO PROCESS	
016226	016072	6020	00	010	10465	TNC	IMOD1	YES, GO PROCESS THIS IOM	
					10466	*		ALL IOM'S HAVE NOW BEEN SCANNED	
016227	100140	2201	00	000	10467	LDX0	.KLNIC,,PI.KL	# OF IOM	
016230	100132	2351	00	000	10468	LDA	.KLICL,,PI.KL	# OF CAHNNEL / IOM	
016231	000002	7350	00	000	10469	ALS	2	*4	
016232	100132	0351	10	000	10470	ADLA	.KLIEN-1,0,PI.KL		IOS04AAM
016233	000000	6200	01	000	10471	EAX0	0,AU		
016234	013362	7400	00	010	10472	STX0	CKVLS	SET MAX CHANNEL INDEX	
					10473	*		CHECK IF SECURITY MODULE IS TO BE LOADED	EL8.
016235	700521	2351	00	000	10474	LDA	.CRFIG,,P.CR		EL8.
016236	000020	3150	07	000	10475	CANA	.FBT31,DL	TEST SHARED MASS STORE	EL8.
016237	016244	6000	00	010	10476	TZE	IMOD9	NO	
016240	000032	2220	03	000	10477	LDX2	.MAS04,DU	SHARED ACCESS ALLOCATION MODULE	
016241	016574	2360	00	010	10478	LDQ	MODCT	CURRENT MODULE COUNT	
016242	016575	7420	06	010	10479	STX2	MODLS,QL	PUT INTO LIST	
016243	016574	0540	00	010	10480	AOS	MODCT	ADD TO COUNT	
					10481	*			
	016244				10482	IMOD9	NULL	CONVERT MODCT WORD FOR MODULE LOADING BY STARTUP	
					10483	*		DU = POINTER TO MODULE LOAD TABLE	
					10484	*		DL = TABLE ENTRY COUNT	
016244	016574	2350	00	010	10485	LDA	MODCT		
016245	000006	7350	00	000	10486	ALS	6		
016246	016574	7550	00	010	10487	STA	MODCT		
016247	016575	6350	00	010	10488	EAA	MODLS		
016250	016574	2750	00	010	10489	ORA	MODCT		
016251	016574	7550	00	010	10490	STA	MODCT		
					10491				
					10492				
					10493	*		BUILD A POINTER AT -11,1 FOR STARTUP SO	
					10494	*		IT CAN INITIALIZE THE STATUS RETURN TABLE	
016252	000000	6350	17	000	10495	EAA	0,7	NEXT STATUS WORD LOCATION	
016253	016424	1750	00	010	10496	SBA	ISVQR	SUBT. BEGIN OF STATUS WORDS	
016254	000015	7710	00	000	10497	ARL	13	SHIFT TO BITS 18-29 AND DIVIDE BY 2	
016255	000002	2750	07	000	10498	ORA	2,DL	INDIRECT BITS	
016256	016424	2750	00	010	10499	ORA	ISVQR	BEGINNING STATUS TABLE ADDRESS	
016257	577765	7231	11	000	10500	LXL3	-11,1,P5		
016260	500000	7551	13	000	10501	STA	0,3,P5	STORE POINTER TO STATUS RETURN TABLE	
					10502	*		FOR STARTUPS' USE IN INITIALIZING THIS TABLE	
016261	100113	1271	00	000	10503	SBLX7	.KLIOE,,PI.KL	GET OFFSET ADDRESS OF IOS LAST ADDRES	

INITIALIZATION OF .MICS

016262 016424 7470 00 010 10504
016263 016424 4470 00 010 10505
10506

STX7 ISVQR
SXL7 ISVQR

SET IOS LAST ADDRESS
SET NEXT MODULE FIRST ADDRESS

INITIALIZATION OF .MICS

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10508
10509 *****
10510 *
10511 *      ACCOUNTING FILE INITIALIZATION
10512 *      IOS SETS UP A PART OF .CRACF,,.CRSKT,,.CRSCI,,.CRSCH.
10513 *
10514 *      AFTER IOS,POPM INITIALIZES THEM COMPLETELY.
10515 *
10516 *****
10517 *
10518 *
10519 *      INITIALIZE .CRSKT
10520 *
10521 *
016264 700363 2201 00 000 10522 LDXO .CRACF+2,,P.CR      GET SCT ADDR OF ACCT FILE
016265 700470 7401 00 000 10523 STXO .CRSKT+.WESCT,,P.CR SET IT
016266 000204 2200 03 000 10524 LDXO .FNABT+.FCCMM,DU SET NOABT,CC PRESENT FLAG
016267 700470 4401 00 000 10525 SXLO .CRSKT+.WESCT,,P.CR
016270 002000 2350 07 000 10526 LDA .FFDD1,DL      SET DATA FLAG 1
016271 700465 2551 00 000 10527 ORSA .CRSKT+.WEPRV,,P.CR SET FIRST DCW PRESENT FLAG
016272 000001 2200 03 000 10528 LDXO .PNPOP,DU      SET KPX AS A POPM
016273 700467 4401 00 000 10529 SXLO .CRSKT+.WEPID,,P.CR
016274 700361 2351 00 000 10530 LDA .CRACF,,P.CR      IS ACCT FILE TAPE OR DISC
016275 040000 3150 03 000 10531 CANA =0400C0,DU
016276 016313 6010 00 010 10532 TNZ TAPEA TAPE FILE
10533 *
016277 000010 2350 07 000 10534 LDA .FSEEK,DL      DISC ,NEED SEEK FLAG
016300 700470 2551 00 000 10535 ORSA .CRSKT+.WESCT,,P.CR
10536 * SET FILE NAME OF DISC IN .CRACF
016301 700363 7201 00 000 10537 LXLO .CRACF+2,,P.CR      GET ADDR OF ACCT INF.
016302 500000 2351 10 000 10538 LDA 0,0,P5
016303 700376 7551 00 000 10539 STA .CRACF+13,,P.CR
016304 500001 2351 10 000 10540 LDA 1,0,P5
016305 700377 7551 00 000 10541 STA .CRACF+14,,P.CR
016306 500002 2351 10 000 10542 LDA 2,0,P5
016307 700400 7551 00 000 10543 STA .CRACF+15,,P.CR
016310 500003 2351 10 000 10544 LDA 3,0,P5
016311 700401 7551 00 000 10545 STA .CRACF+16,,P.CR
016312 016316 7100 00 010 10546 TRA IDISC
10547 *
016313 016313 10548 TAPEA NULL
016313 150000 2350 03 000 10549 LDA =0150000,DU      SET WRITE COMMAND
016314 700472 7551 00 000 10550 STA .CRSKT+.WEICM,,P.CR
016315 700475 7551 00 000 10551 STA .WEFCM+.CRSKT,,P.CR
10552 * IDISC NULL
016316 000000 2200 03 000 10553 LDXO 0,DU
016317 700473 7401 00 000 10554 STXO .CRSKT+.WEOFF,,P.CR SET DCW OFFSET
10555 * CREATE COMMAND BLOCK DESC FOR STATUS RETURN
016320 000070 6704 04 16410 10556 LDD PO,STVEC,$
016321 700500 0505 00 000 10557 STD PO,.CRSKT+.WEICB,,P.CR
    
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INITIALIZATION OF .MIOS

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10558 * CREATE ENTRY DESC FOR CC
016322 006134 4704 07 000 10559 LDP PO,SD,MDD,DL
016323 000002 2351 00 000 10560 LDA .MIOS,,PC
016324 001777 3750 07 000 10561 ANA =01777,DL GET OFFSET FROM SYSTEM LINKAGE
016325 000007 7350 00 000 10562 ALS 7 AJUST ISEG# IN AREG
016326 016412 2550 00 010 10563 ORSA ACTCC
016327 016412 2370 00 010 10564 LDAQ ACTCC
016330 700506 7571 00 000 10565 STAQ .CRSKT+.WEIOE,,P.CR SET ENTRY DESC
10566 * SET BUFFER SIZE IN ACTFL
016331 700374 7201 00 000 10567 LXLO .CRACF+11,,P.CR
016332 700373 1201 00 000 10568 SBLX0 .CRACF+10,,P.CR LENGTH OF BUFFER
016333 006737 7400 00 010 10569 STX0 IBUF2
016334 700361 2351 00 000 10570 LDA .CRACF,,P.CR
016335 030000 3150 03 000 10571 CANA =0030000,DU DETERMINE IF 1WD FOR LOGICAL EOF
016336 016340 6010 00 010 10572 TNZ *+2 SHOULD BE RESEREVD--DISC ACCT
016337 000001 0200 03 000 10573 ADLX0 1,DU
016340 006731 7400 00 010 10574 STX0 IBUF1
016341 000004 1200 03 000 10575 SBLX0 4,DU
016342 001776 1000 03 000 10576 CMPX0 1022,DU LIMIT LARGEST L.R. FOR TAPE
016343 000002 6020 04 000 10577 TNC 2,IC
016344 001775 6200 00 000 10578 EAX0 1021
016345 006744 7400 00 010 10579 STX0 IBUF3 TO 1021W TO PREVENT LOCK UP FAULT
10580 *
10581 * SET UP FOR .CRSCI AND .CRSCH
10582 *
016346 000000 2360 03 000 10583 LDQ 0,DU
016347 700363 7221 00 000 10584 LXL2 .CRACF+2,,P.CR GET ADDR OF SCI($ACCBUF DATA)
016350 700361 2351 00 000 10585 LDA .CRACF,,P.CR CAN,T CHANGE INFOR MATION
016351 030000 3150 03 000 10586 CANA =030000,DU IS DISC ACCT CONFIGURED
016352 016356 6010 00 010 10587 TNZ SCFI YES, CAN CHANGE INFORM.
016353 000200 2360 03 000 10588 LDQ =0200,DU TAPE W/IDS CANT DISPOSITION
016354 500003 7201 12 000 10589 LXLO 3,2,P5 RESTORE TAPE NAME IN CRACF
016355 700363 4401 00 000 10590 SXLO .CRACF+2,,P.CR
016356 500005 2561 12 000 10591 SCFI ORSQ OR IN $ACCBUF DISPOSITION DATA
016357 500004 2361 12 000 10592 LDQ 4,2,P5 GET BUFFER OR NCT TO BUFFER DATA
016360 500006 2351 12 000 10593 LDA 6,2,P5 MAX REGAL TYPE
016361 000044 2750 07 000 10594 ORA 36,DL
016362 700436 7551 00 000 10595 STA .CRSCH,,P.CR
10596 *
016363 000021 2200 03 000 10597 LDX0 17,DU 1ST TIME THRU THE LOOP
016364 016405 7410 00 010 10598 STX1 SCFI40 SAVE RETURN ADDR
10599 *
016365 000000 2210 03 000 10600 SCFI20 LDX1 0,DU 9WD IN .CRSCI
016366 000000 2350 03 000 10601 SCFI30 LDA 0,DU UPPER HALF OF $ACCBUF
016367 000001 7370 00 000 10602 LLS 1 2ND TIME THRU ,SET UP
016370 000000 7350 10 000 10603 SCFI32 ALS 0,0 BITS 1 AND 19 FOR EACH
016371 000001 7370 00 000 10604 LLS 1 ENTRY IN .CRSCI
016372 000000 7350 10 000 10605 ALS 0,0 LOWER HALF OF IT
016373 700437 2551 11 000 10607 ORSA .CRSCI,1,P.CR
    
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IOS04360
IOS04365

INITIALIZATION OF .MIOS

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016374 000001 0210 03 000 10608 ADLX1 1,DU
016375 000022 1010 03 000 10609 CMPX1 18,DU ARE WE DONE WITH THIS LOOP
016376 016366 6010 00 010 10610 TNZ SCFI30
016377 000001 2210 03 000 10611 LDX1 1,DU YES,INCREM 1ST SHIFT OF DATA FOR REC.
016400 016370 7410 00 010 10612 STX1 SCFI32 WHCES DISPOSITION CAN CHANGE
016401 500005 2361 12 000 10613 LDQ 5,2,P5 GET DISPOSITION DATA
016402 000001 1200 03 000 10614 SBLX0 1,DU HAVE WE PROCESSED 2ND LOOP
016403 000017 1000 03 000 10615 CMPX0 15,DU
016404 016365 6010 00 010 10616 TNZ SCFI20 NO-DO IT
016405 000000 6210 00 000 10617 SCFI40 EAX1 **
016406 016414 7100 00 010 10618 TRA INIACT
10619 *
10620 *
10621 * VECTOR FOR STATUS RETURN OF ACCT
016407 000000011007 000
016410 000006750640 000 10622 EVEN
016411 000504001777 000 10623 STVEC VEC .DR7,.CRSKT+.WEDRF,7,(R,W)
10624 *
10625 * ENTRY DESC. FOR ACCT CC
016412 007160400010 010 10626 ACTCC E8DSC 0,.SLBAS,.SLSIZ,**,ACFCC,S
016413 1674000000000 000 VFD 18/ACFCC,1/1,10/**,3/0,4/8
10627 INIACT NULL
10628
016414 006134 4704 07 000 10629 LDP PO,SD,MDD,DL GET MDD TABLE
016415 000002 2351 00 000 10630 LDA .MIOS,,PC GET .MIOS SD
016416 007777 3750 07 000 10631 ANA =07777,DL
016417 100114 7551 00 000 10632 STA .KLIOS,,PI.KL SET .MIOS SEGMENT ID
10633
10634
10635
10636 PREPARE FOR DEPARTURE FROM IOS INITIALIZE
016420 016574 2350 00 010 10637 LDA MODCT DEPENDENT MODULE INFO
016421 016424 2360 00 010 10638 LDQ ISVQR RETURN ADDRESS
016422 500000 7101 11 000 10639 TRA 0,1,P5 RETURN TO STARTUP
10640
10641
016423 0000000000000 000 10642 ICM1 DEC 0 INTERRUPT VECTOR PTR,DU -- #S-2000'S,
016424 0000000000000 000 10643 ISVQR OCT 0 NEXT SPACE FOR TABLES - IN UPPER
016425 0000000000000 000 10644 CRBASE OCT 0 .CR SEGMENT BASE
016426 000000 0000 00 000 10645 MBXTY TALLY 0,0,0 TALLY WORD FOR MAILBOX
016427 000000 0000 00 000 10646 MBXTY1 TALLY 0,0,0 TALLY WORD FOR MAILBOX (IOS OFFSET)
10647 EVEN
016430 0000000000000 000 10648 DESCWK OCT 0,0 WORK AREA FOR DESCRIPTOR
016431 0000000000000 000
016432 377776750640 000 10649 ABVEC2 VEC .DR2,C,128*1024-1,(R,W)
016433 000000001772 000
10650
10651 *

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INITIALIZATION OF .MIOS

016434	000000	0000 00	000	10652	NMAP	ARG	0	1-IOM SYSTEM	IOS03000
016435	016437	0000 00	010	10653		ARG	2MAP	2-IOM SYSTEM	IOS03005
016436	016477	0000 00	010	10654		ARG	3MAP	3-IOM SYSTEM	IOS03010
				10655	*				IOS03015
016437	777777	000004	000	10656	2MAP	ZERO	-1,4	MAP FOR 2-IOM SYSTEM	IOS03020
016440	777777	000005	000	10657		ZERO	-1,5		IOS03025
016441	777777	000014	000	10658		ZERO	-1,12		IOS03030
016442	777777	000015	000	10659		ZERO	-1,13		IOS03035
016443	000000	000024	000	10660		ZERO	0,20		IOS03040
016444	000001	000025	000	10661		ZERO	1,21		IOS03045
016445	777777	000034	000	10662		ZERO	-1,28		IOS03050
016446	777777	000035	000	10663		ZERO	-1,29		IOS03055
		016447		10664		DUP	1,4		IOS03060
016447	777777	777777	000	10665		ZERO	-1,-1		IOS03065
016450	777777	777777	000			ZERO	-1,-1		
016451	777777	777777	000			ZERO	-1,-1		
016452	777777	777777	000			ZERO	-1,-1		
016453	000002	777777	000	10666		ZERO	2,-1		IOS03070
016454	000003	777777	000	10667		ZERO	3,-1		IOS03075
		016455		10668		DUP	1,6		IOS03080
016455	777777	777777	000	10669		ZERO	-1,-1		IOS03085
016456	777777	777777	000			ZERO	-1,-1		
016457	777777	777777	000			ZERO	-1,-1		
016460	777777	777777	000			ZERO	-1,-1		
016461	777777	777777	000			ZERO	-1,-1		
016462	777777	777777	000			ZERO	-1,-1		
016463	000004	777777	000	10670		ZERO	4,-1		IOS03090
016464	000005	777777	000	10671		ZERO	5,-1		IOS03095
		016465		10672		DUP	1,6		IOS03100
016465	777777	777777	000	10673		ZERO	-1,-1		IOS03105
016466	777777	777777	000			ZERO	-1,-1		
016467	777777	777777	000			ZERO	-1,-1		
016470	777777	777777	000			ZERO	-1,-1		
016471	777777	777777	000			ZERO	-1,-1		
016472	777777	777777	000			ZERO	-1,-1		
016473	000006	777777	000	10674		ZERO	6,-1		IOS03110
016474	000007	777777	000	10675		ZERO	7,-1		IOS03115
016475	777777	777777	000	10676		ZERO	-1,-1		IOS03120
016476	777777	777777	000	10677		ZERO	-1,-1		IOS03125
		10678			*				IOS03130
016477	777777	000004	000	10679	3MAP	ZERO	-1,4	3-IOM SYSTEM	IOS03135
016500	777777	000005	000	10680		ZERO	-1,5		IOS03140
016501	777777	000006	000	10681		ZERO	-1,6		IOS03145
016502	777777	000014	000	10682		ZERO	-1,12		IOS03150
016503	000000	000015	000	10683		ZERO	0,13		IOS03155
016504	000001	000016	000	10684		ZERO	1,14		IOS03160
016505	000002	000024	000	10685		ZERO	2,20		IOS03165
016506	777777	000025	000	10686		ZERO	-1,21		IOS03170
016507	777777	000026	000	10687		ZERO	-1,22		IOS03175
016510	777777	000034	000	10688		ZERO	-1,28		IOS03180

INITIALIZATION OF .MIOS

016511	777777	000035	000	10689	ZERO	-1,29		IOS03185
016512	777777	000036	000	10690	ZERO	-1,30		IOS03190
016513	000003	777777	000	10691	ZERO	3,-1		IOS03195
016514	000004	777777	000	10692	ZERO	4,-1		IOS03200
016515	000005	777777	000	10693	ZERO	5,-1		IOS03205
		016516		10694	DUP	1,5		IOS03210
016516	777777	777777	000	10695	ZERO	-1,-1		IOS03215
016517	777777	777777	000		ZERO	-1,-1		
016520	777777	777777	000		ZERO	-1,-1		
016521	777777	777777	000		ZERO	-1,-1		
016522	777777	777777	000		ZERO	-1,-1		
016523	000006	777777	000	10696	ZERO	6,-1		IOS03220
016524	000007	777777	000	10697	ZERO	7,-1		IOS03225
016525	000010	777777	000	10698	ZERO	8,-1		IOS03230
		016526		10699	DUP	1,5		IOS03235
016526	777777	777777	000	10700	ZERO	-1,-1		IOS03240
016527	777777	777777	000		ZERO	-1,-1		
016530	777777	777777	000		ZERO	-1,-1		
016531	777777	777777	000		ZERO	-1,-1		
016532	777777	777777	000		ZERO	-1,-1		
016533	000011	777777	000	10701	ZERO	9,-1		IOS03245
016534	000012	777777	000	10702	ZERO	10,-1		IOS03250
016535	000013	777777	000	10703	ZERO	11,-1		IOS03255
016536	777777	777777	000	10704	ZERO	-1,-1		IOS03260
				10705 *				IOS03265
				10706				
		016537		10707	TABLE	NULL		
				10708 *				
				10709				
016537	610000000064		000	10709	VFD	6/.DS190,30/.MDSX6	DSS190	DISC PACK
016540	620000000064		000	10710	VFD	6/.DS191,30/.MDSX6	DSS191	DISC PACK
016541	640000000064		000	10711	VFD	6/.DS400,30/.MDSX6	MS0400	DISC PACK
016542	650000000064		000	10712	VFD	6/.DS450,30/.MDSX6	MSU450	DISC PACK
016543	660000000064		000	10713	VFD	6/.DS500,30/.MDSX6	MSU500	DUAL DISK
				10714 *				
				10715 *				
				10716				
016544	100000000376		000	10716	VFD	6/.DMTAP,30/.MMTAP	MAG TAPE	
016545	110000000376		000	10717	VFD	6/.DMTA7,30/.MMTAP	MAG TAPE (ASA 7 TRACK)	
016546	120000000376		000	10718	VFD	6/.DMTA9,30/.MMTAP	MAG TAPE (ASA 9 TRACK)	
016547	130000000376		000	10719	VFD	6/.DMTM7,30/.MMTAP	MAG TAPE (500 7 TRACK)	
016550	140000000376		000	10720	VFD	6/.DMTM9,30/.MMTAP	MAG TAPE (500 9 TRACK)	
016551	150000000376		000	10721	VFD	6/.DMTC7,30/.MMTAP	MAG TAPE (MTS-600 7 TRACK)	
016552	160000000376		000	10722	VFD	6/.DMTC9,30/.MMTAP	MAG TAPE (MTS-600 9 TRACK)	
				10723 *				
				10724 *				
				10725				
016553	340000000301		000	10725	VFD	6/.DCR31,30/.MGPIO	CARD READER .CRZ301	
016554	200000000301		000	10726	VFD	6/.DCR20,30/.MGPIO	CARD READER	
016555	210000000301		000	10727	VFD	6/.DCR21,30/.MGPIO	CARD READER (DUAL)	
016556	230000000055		000	10728	VFD	6/.DCP20,30/.MCPIO	CARD PUNCH (V BED BULL)	
016557	220000000572		000	10729	VFD	6/.DRP24,30/.MRPIO	READ/PUNCH	IOS03285
016560	320000000055		000	10730	VFD	6/.DCF30,30/.MCPIO	CARD PUNCH CPZ300	

INITIALIZATION OF .MIOS

016561	330000000055	000	10731	VFD	6/.DCP31,30/.MCP10	CARD PUNCH CPZ301
016562	250000000512	000	10732	VFD	6/.DPR30,30/.MPRIO	PRINTER PRT300
016563	260000000512	000	10733	VFD	6/.DPR21,30/.MPRIO	PRINTER PRT201
016564	360000000512	000	10734	VFD	6/.DPR23,30/.MPRIO	PRINTER PRT203
016565	350000000512	000	10735	VFD	6/.DPR33,30/.MPRIO	PRINTER PRT303
016566	240000000512	000	10736	VFD	6/.DPR41,30/.MPRIO	PRINTER PRT400,401,402
016567	270000000516	000	10737	VFD	6/.DPTAP,30/.MPTAP	PAPER TAPE READER/PUNCH

10738 *
10739 *

SPECIAL DEVICES

016570	010000000063	000	10740	VFD	6/.DC355,30/.MDNET	350 ON IOM DIR DATA CHAN
016571	370000000067	000	10741	VFD	6/.DUNCP,30/.MDIAC	FRONT END PROCESSOR
016572	300000000566	000	10742	VFD	6/.DCONS,30/.MTYPE	CONSOLE
016573	310000000566	000	10743	VFD	6/.DSCC1,30/.MTYPE	SYSTEM CONTROL CENTER

EL8.

016574 10744 ETABL NULL
10745 *

016574	000000000000	000	10746	MODCT	OCT	0
	016575		10747	MODLS	DUP	1,25

DEPENDENT MODULE LIST

016575	000000 000000	000	10748	ZERO	
016576	000000 000000	000		ZERO	
016577	000000 000000	000		ZERO	
016600	000000 000000	000		ZERO	
016601	000000 000000	000		ZERO	
016602	000000 000000	000		ZERO	
016603	000000 000000	000		ZERO	
016604	000000 000000	000		ZERO	
016605	000000 000000	000		ZERO	
016606	000000 000000	000		ZERO	
016607	000000 000000	000		ZERO	
016610	000000 000000	000		ZERO	
016611	000000 000000	000		ZERO	
016612	000000 000000	000		ZERO	
016613	000000 000000	000		ZERO	
016614	000000 000000	000		ZERO	
016615	000000 000000	000		ZERO	
016616	000000 000000	000		ZERO	
016617	000000 000000	000		ZERO	
016620	000000 000000	000		ZERO	
016621	000000 000000	000		ZERO	
016622	000000 000000	000		ZERO	
016623	000000 000000	000		ZERO	
016624	000000 000000	000		ZERO	
016625	000000 000000	000		ZERO	

10749 LIT

016626	777777700000	000			
016627	007777777777	000			

10750 *
10751 *
10752 *

INITIALIZE ROUTINE PATCH AREA

016630	10753	DUP	2,10	10 WORD PATCH AREA
	10754			/SER# /LOG# /*****PATCH*****/-----

29FW1270

COMMENTS-

INITIALIZATION OF .MICS

			10755	/	/	/XFR. FROM	CONTENTS	/		
			10756	.	.	.		.
016630	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016631	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016632	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016633	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016634	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016635	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016636	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016637	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016640	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	
			10757	.	.	.		.
016641	000000	000000	000 10757	ZERO	/	/	/	OCTAL	/	

ERROR LINKAGE

016642 000000000000 000
016643 333331466220 000

10758 END

GMAP VERSION/ASSEMBLY DATES JMPA 790514/052579 JMPB 791026/102679 JMPC 790511/052579

16644 IS THE NEXT AVAILABLE LOCATION.
THERE WERE NO WARNING FLAGS IN THE ABOVE ASSEMBLY

OCTAL	SYMBCL	REFERENCES BY SEQUENCE NO.							
10	BPRP	7850	7850	7898					
654	BPVEC	692	692	710					
7026	BTL9	5496	5496	5592					
2652	BUFEX	2104	1896	2104					
2416	BUFFLG	1892	1214	1224	1248	1255	1258	1892	
2630	BUFST	2077	2040	2043	2049	2053	2057	2060	2070 2077
2710	BUFVEC	2139	2082	2139					
57	BUGOPT	8891	8891	10285					
3051	BUGSR	2320	2320	10295					
7773	BUMP3	6365	6360	6362	6365				
2154	BUSYF	1684	551	564	638	648	1684		
7664	BYPAS	6189	5968	5972	5993	6030	6189		
1706	BYPGR	1453	368	504	761	962	1453	6896	10247
377	BYTEN0	9812	9812	9856	9929				
3151	CACHE	2410	2346	2364	2410				
3157	CACHOK	2414	2386	2392	2396	2414			
3115	CACHOM	2377	2369	2373	2377				
3163	CACHX	2417	2412	2417					
3161	CACHY	2416	2401	2416					
5320	CALLB	4291	4283	4291					
700000	CALLID	9811	9811	9834	9850	9858	9933	10016	
5672	CBKMON	4642	4642	10288					
4653	CCACK	3822	3798	3807	3809	3822	4093		
3266	CCCNT	2515	2515	2529					
5557	CCDD	4546	4541	4546					
7264	CCSNG	5704	5630	5635	5638	5704			
7232	CCSOK	5668	5632	5651	5668	5719			
12320	CCZOP	8476	8375	8441	8461	8464	8476		
377	CDISP	449	430	449					
10	CFG	31	31	10171	10177				
2155	CHAN1	1685	1364	1365	1685				
1612	CHAN	1359	700	715	1359				
2153	CHANO	1682	716	815	838	1402	1682		
7614	CHBSY	6138	6117	6138					
13262	CHECK	9434	3384	9401	9434				
13273	CHEKIT	9443	9439	9443					
13234	CHKOK	9396	9396	9456					
456	CHKQU	518	512	518	627	644	654		
625	CHNO	651	640	651					
1	CHN1	6963	4193	6466	6963				
2	CHN2	6965	4060	6965					
3	CHN3	6967	3763	6967					
4	CHN4	6969	4104	6969					
10535	CHNL1	7001	6964	7001					
10611	CHNL2	7056	6966	7056					
10616	CHNL3	7073	6968	7073					
10616	CHNL4	7074	6970	7074					
10557	CHNLH	7025	7004	7025					
10540	CHNLN	7005	7005	7028	7034	7037	7043		
10574	CHNLZ	7039	7031	7039					

OCTAL SYMBCL REFERENCES BY SEQUENCE NO.

OCTAL	SYMBCL	REFERENCES BY SEQUENCE NO.
5524	FNQ0	4516 4516 4520
5541	FNQ11	4528 4518 4527 4528
5532	FNQ1	4522 4522 4525
5635	FNQ21	4601 4593 4601
5632	FNQ2	4597 4590 4597
4056	FNRML	3209 3205 3209
11144	FOR0	7431 7427 7431
11154	FOR1	7432 7428 7432
11164	FOR2	7433 7429 7433
11174	FOR3	7434 7430 7434
11374	FORWD	7682 7626 7682
11403	FORWDE	7696 7541 7684 7686 7696 7724
11410	FORWDS	7702 7699 7702
13120	FOUN	9254 9254 9277
11415	FOUND1	7716 7664 7671 7716
11427	FOUND2	7730 7719 7730
11445	FOUND3	7749 7740 7749
11453	FOUND4	7760 7760 7774
7777	FOUND	6370 6364 6370
13134	FPART	9267 9247 9267
4065	FSBFM	3221 3221 3678
1170	FSTAT	991 991 1018
17	FSTTHR	8959 8900 8959
13147	FTIMS	9278 9272 9278 9280
1145	FXLVL	968 829 968
1	GEINOS	3238
610	GEPR	637 577 578 583 584 585 586 587 588 602 604 605 606 608 610 615
		621 624 630 637
12553	GET1	8897 8897 10136 10182
13573	GETAQ	9884 9884 9890 10061
471	GETCH	533 529 533
13015	GETCC	9126 9126 9145
12552	GETENT	8895 8801 8855 8895
13034	GETILT	9143 9138 9143
13027	GETIT	9137 9121 9137
13007	GETWSN	9119 6512 9119
2136	GNSPL	1653 1648 1653
3523	GOPQG	2782 2776 2782
3624	GPCSI	2883 2871 2873 2883
4752	GPOPT	3909 3813 3816 3909 4696 4699
3554	GPRIO	2821 2801 2807 2814 2821
3636	GSMOR	2904 2904 2909
3631	GSPNT	2896 2879 2896
3617	GSRCH	2876 2876 2881
6622	GSTRT	5292 19 5292
656	GTCHN1	693 693 720
671	GTCHN2	706 468 706
676	GTCHN4	712 712 10275
666	GTCHN	702 660 702 763 765 813 852 859 864 867 900 945 964 974 983 993
		1009 1029 1332 1347 1444 1457 1674 2284 2297 2709 2716 2719 2724 2893 2949

OCTAL	SYMBCL	REFERENCES BY SEQUENCE NO.							
15750	INITM	10231	217	10231					
10440	INITMB	6864	6864	10244					
16036	INMB4	10298	10286	10298	10310				
4414	INOS	3577	19	3577					
4565	INRML	3753	3722	3753					
13643	INSBYT	9928	9922	9928					
16066	INSCAN	10339	10333	10339					
13656	INSSCT	9940	9935	9937	9939	9940			
10306	INSTZ	6713	6710	6713					
711	INTCV	727	506	727	10278				
706	INTOK	722	694	722					
225	INTYP	328	320	328					
14035	INVAL	10072	9836	9847	9862	9876	9878	10072	
5653	IOCALL	4624	4559	4572	4624				
13431	IOCBCK	9714	4642	9714					
545	IOFLT	592	568	592					
4153	IOLNK	3274	3260	3263	3268	3274			
614	IOMOFF	642	509	642					
4662	IONTR	3834	3824	3834					
14250	IORG	10186	10186	10342					
154	IOTA	283	283	414					
121	IOTRM	240	19	240					
161	IOU	288	284	288					
5065	IRCNT	4030	4026	4030					
5114	IRES2	4074	4064	4066	4074				
5126	IRES3	4087	4080	4083	4087				
5073	IRESS	4053	3724	4053	7326				
4701	IRETN	3856	3241	3249	3838	3849	3856	4018	5215
6124	ISDCW1	4831	4724	4770	4821	4831			
6067	ISDCW	4797	4717	4797					
6065	ISNG	4793	4793	4801					
5051	IST11	4010	3990	4002	4010	4377			
5042	IST12	4000	3992	4000					
5027	IST1	3987	3987	4326					
5023	ISTAT	3980	3956	3967	3969	3980	4028	4032	4036
16424	ISVQR	10643	10344	10496	10499	10504	10505	10638	10643
1156	ITERM	978	972	978					
2012	ITLS2	1537	1537	1673					
2017	ITLS3	1544	1544	1668					
2063	ITLS3A	1588	1581	1583	1588				
2142	ITLS4	1664	1574	1617	1627	1639	1645	1650	1664
2125	ITLS4A	1641	1548	1550	1641				
2073	ITLS5	1600	1592	1600					
2076	ITLS6	1606	1586	1606					
2074	ITLS7	1602	1597	1602					
2036	ITLS	1562	1555	1558	1562				
2043	ITLSS	1569	1561	1569					
1717	ITLST1	1464	1464	1720	1734	1742	1744	1749	
2006	ITLST	1531	1467	1531					
2152	ITRTM	1680	1559	1680					

OCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.															
400000	.FBT0	1017	3586	4448	4960	7765	8941	9257	9968								
200	.FBT10	452															
20	.FBT13	7042															
4	.FBT15	1496															
2	.FBT16	1019	7379														
1	.FBT17	2048	4507	4526	4639												
400000	.FBT18	1729															
200000	.FBT19	7324															
200000	.FBT1	292	695	4960	6157	10158											
100000	.FBT20	10164															
10000	.FBT23	2056	3888	7357	9262												
4000	.FBT24	2058															
2000	.FBT25	2031															
200	.FBT28	3870															
100000	.FBT2	1741	1745	7372	9079												
40	.FBT30	596	10158														
20	.FBT31	10158	10475														
4	.FBT33	4571															
2	.FBT34	879	2411	2765	7033												
1	.FBT35	3164															
40000	.FBT3	9063	9075														
20000	.FBT4	7035	7381														
10000	.FBT5	1719	1727														
4000	.FBT6	693	802														
1000	.FBT8	10176															
400	.FBT9	1496															
770000	.FCCMD	3641	4993	6277	6478	6637	6741	7276									
4	.FCCMM	3902	4648	9899	10524												
77	.FCHNO	1984	1990	6623													
3774	.FCHNX	354	367	872	888	921	970	1354	1546	1632	1846	2029	2704	2784	3072	3074	
		3262	3265	3313	5512	5682	5900	5957	5959	6077	6079	6089	6111	6113	6149	6153	
		6361	6375	6621	6879	7040	8258	8293	9593								
770000	.FCSUB	26	26	2055													
100000	.FDNTU	2539	2702														
40	.FDSSA	6527	7969	7985	8024	8097											
7700	.FDVNO	1975	6611	9868													
770000	.FDVTP	1099	1934	2044	3324	3444											
10	.FEXRQ	1272	3043														
20	.FEXTC	32	3094														
10	.FEXTM	3056	3094	9002													
4000	.FFAUX	4712	5118	5141	5185	6524	7962	8066	8092	9311							
40000	.FFDCW	2428	4769	5118	5141	5185	6524	7964	8064	8092	8406	9663					
2000	.FFDD1	2385	3094	3755	4130	4190	5000	5199	5590	5654	6486	6581	10526				
1000	.FFDD2	2391	2438	4763	5000	6196	6492	6586	8415	9672							
400	.FFDMM	4715	7013														
400000	.FFIOR	3224	3619	3772	3790	3860	3989	4063	4091	4133	4150	4196	4303				
200000	.FFMOD	3625	3843	3900	4204	4225	4333	4502	4646								
20000	.FFRLC	3630	3867	3875	4706												
10000	.FFROD	3632	3867	3875	3878	3890	4709										
100000	.FFTYP	1263	2510	2799	2805	2810	8211	8445	8859	8996							

OCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.															
1	.TLNKS	3387															
200000	.TRDBK	2592	2597														
400000	.TRELK	2523	2571	2607	2828												
23	.WEACF	1010	1035	1220	5497	5587	5621	5649	5706	5718	5728	5760					
46	.WECAV	8893															
20	.WEDRF	2393	4135	4144	4147	4240	4241	4244	4245	4543	4612	4679	4756	4799	4822	4827	
		5106	6494	6531	7966	10623											
16	.WEDRI	2387	3647	3765	3768	4139	4142	4218	4219	4239	4242	4243	4246	4253	4256	4536	
		4609	4673	4734	4798	4808	4813	5182	6468	6488	6683	7971	7987	8026	9897		
2	.WEEAD	8993															
4	.WEECT	1733	8899	8914	8919	9049	9051	9058	10148								
24	.WEEND	1068	1903	3613	3618	3648	3672	3770	3793	3836	3940	3983	3984	4017	4076	4102	
		4220	4272	4305	4308	4322	4325	4563	4565	4602	4604	4626	4627	4733	4736	4755	
		4758	4810	4824	4932	4954	5500	5508	5628	5636	6498	6510	6530	6533	6539	6543	
		7896	7943	7959	7997	8010	8047	8054	8058	8060	8101	8924	9182	9183	9190	9193	
		9196	9198	9316	9628	9632											
10	.WEEP1	374	1031	1188	1191	1193	1201	1348	1904	2092	2273	5314	7892	8196	8197	8203	
		8209	8221														
12	.WEEP2	376	1033	1349	2274	3095	3098	5315	8243	10067							
11	.WEFCM	1233	1234	1235	1335	1556	1601	1635	1637	1638	1849	1852	1853	1964	2933	2935	
		3162	3261	3273	3646	3696	3788	4058	4287	4665	5136	5159	5177	5589	5658	5659	
		6074	6076	6090	6148	6166	6174	6181	6275	6288	6337	6615	6636	7036	7245	7250	
		7254	7275	7280	7333	7342	7347	7348	7350	7404	7923	7925	7941	9911	10551		
12	.WEFDC	3782	4078	4157	4768	4817	4998	6692	6803	7089	9912	9915	9916				
14	.WEICB	2345	2349	2378	2549	3239	3276	3279	3799	3802	3803	3997	3998	4069	4072	4548	
		4554	4566	4605	4628	8214	9893	10557									
6	.WEICM	1589	2065	2167	3640	3693	3785	3787	4055	4057	4298	4663	4992	4996	5134	5157	
		5176	5588	5622	5656	5657	5694	6274	6287	6476	6652	7002	7075	7236	7264	7269	
		7281	7309	7316	7332	7922	7928	7947	7967	8034	8069	8089	8111	8137	8164	9910	
		10550															
22	.WEIOE	2479	4552	4615	4652	9487	9492	9496	9919	10565							
13	.WEIOS	1222	3981	4011	4207	4215	4235	4268	4281	4321	4376	4560	4562	4643	4805	4975	
		4987	5204	6772	7359	7871	7900	7915	7934	8107	8132	8134	8136	8138	8140	8193	
		9914	9927	9931	9969	9980	9985	10064									
6	.WEMRC	8903	8931	8934	9082												
5	.WEMRT	8902	8936	8938	8944												
7	.WEOFF	1012	2434	2440	3781	4156	4165	4221	4236	4238	4266	4669	4731	4740	4753	4762	
		4811	4816	4825	4830	5107	5183	6583	6588	7974	8033	8090	8241	8411	8417	9665	
		9674	9913	10554													
3	.WEPAD	1462	1728	1746	8929	8942	9061	9076	9081								
5	.WEPEP	1069	1081	1145	1159	1174	1236	1270	1940	1998	2007	2161	2410	2418	2543	2764	
		2941	3165	3192	3282	3395	3495	3615	3762	3815	3941	4079	4192	4359	4443	4697	
		4847	4948	4979	5002	5075	5737	5739	6041	6133	6169	7032	7290	7396	7875		
0	.WEPG1	1724															
3	.WEPID	1034	1355	1634	2089	2169	2314	2334	3764	4061	4105	4194	5299	5990	6198	6259	
		6467	6604	8925	10529												
2	.WEPLK	8368	8808	8809	9010	9016	9018	9022	9025	9095							
1	.WEPRV	1262	2384	2429	2437	2494	2499	2511	2798	2804	2809	3096	3223	3235	3360	3362	
		3370	3378	3634	3756	3771	3789	3837	3841	3899	3988	4013	4062	4090	4131	4132	
		4149	4191	4195	4203	4224	4302	4332	4338	4631	4764	4804	4835	4919	5001	5117	

OCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.							
16434	NMAP	10652	10266	10652					
5407	NOABT	4375	4365	4375					
10140	NOAUX	6559	6528	6559					
4515	NOBM	3679	3229	3673	3679				
3306	NOCCA	2534	2480	2534					
3252	NOCCQ	2496	2492	2496					
6637	NOCI	5307	5302	5304	5307				
503	NOCON	550	536	550					
5134	NODAT	4101	3725	4101					
1773	NODSP	1518	1518	1525					
340	NOFLT	410	410	415	418				
3033	NOIO	2296	2282	2296					
13122	NOMCH	9257	9253	9257					
3205	NOPFX	2443	2430	2439	2443				
3171	NOPPT	2427	2419	2427					
11370	NOPRCT	7669	7666	7669					
1137	NOPSIA	960	733	960					
1506	NOREC	1261	1229	1242	1244	1246	1249	1261	
332	NORMA	403	347	349	352	356	358	359	403
335	NORME	406	394	398	406				
242	NORMI	346	311	346					
10317	NORML	6739	6721	6739					
330	NORO	402	362	364	402				
324	NORST	397	391	397					
4314	NOSCT	3404	3396	3401	3404				
6320	NOSP	4980	4977	4980					
3552	NOSYS	2816	2800	2811	2816				
6264	NOTBS1	4947	4920	4943	4947				
1522	NOTEX	1275	1264	1268	1271	1275			
2606	NOTHR	2052	2046	2052					
10461	NOTLK	6886	6869	6882	6886				
11071	NOTMR	7349	7335	7340	7349				
3071	NOTR1	2344	2320	2326	2344				
11463	NOTS1	7778	7778	7813					
5715	NPCD	4667	4659	4667					
6352	NPCDR	5010	4982	4989	5010				
5534	NQ1	4523	4511	4515	4523				
14	NQPAG	8890	1743	8890	8906				
10154	NREL	6579	6573	6579					
5271	NSECU	4259	3759	3769	4143	4148	4259		
6333	NSPCE	4991	4984	4991					
1602	NSPL1	1350	1342	1350					
1211	NT355	1015	980	1015					
7410	NTBSY	5965	5953	5965					
1561	NTHSH	1324	1216	1225	1290	1296	1309	1324	
3544	NTRECR	2808	2794	2808					
6547	NTSPC	5210	5206	5210					
1576	NTSPL	1345	1339	1345					
3540	NTSYS	2803	2797	2803					
5473	NULLF	4455	4446	4455					

OCTAL SYMBOL REFERENCES BY SEQUENCE NO.

OCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.
5004	NULLS	3961 3944 3961
3323	NULNK	2556 2540 2545 2552 2556
5346	NULRD	4318 4318 4460
5006	NULS1	3964 3964 4085
5347	NULWT	4320 4320 4462
5616	NWCAIO	4580 19 4580
7564	NXBAR	6109 6109 6123 6125 6127 6141 6144
10010	NXCON	6381 6374 6376 6378 6381
12172	NXTNT	8367 8367 8386
13674	NXTONE	9956 9956 9964
3105	NXTPR	2368 2368 2371
12670	NXX1	9009 9003 9009
3137	OCPU	2398 2382 2390 2398 2403 2406 2408
10170	ONEDCW	6593 6587 6593
16016	ONEIO	10280 10267 10280
373	OPENG	443 435 443
3626	OPQGT	2888 2888 2922 2928 2942
2516	ORDEV	1981 1976 1981
2575	OTHER	2042 2027 2042
1436	OUT	1208 1114 1115 1124 1150 1153 1202 1203 1208
0	PO	221 224 435 710 713 717 1066 1067 1304 1305 1306 1431 1434 1437 1508
		1511 1514 1560 1565 1566 1573 1914 1915 2000 2001 2173 2174 2317 2319 2348
		2349 2351 2352 2420 2423 2432 2436 2441 2548 2549 2550 2647 2648 2650 2651
		2654 2655 3090 3093 3211 3212 3221 3222 3226 3233 3237 3278 3279 3280 3329
		3330 3456 3578 3579 3620 3621 3622 3674 3675 3713 3715 3716 3719 3775 3863
		3864 3865 3866 3869 3872 3886 3891 3892 4153 4162 4217 4218 4232 4234 4498
		4499 4500 4501 4503 4535 4536 4542 4543 4551 4552 4553 4564 4565 4568 4570
		4584 4585 4602 4606 4625 4628 4721 4722 4728 4732 4739 4750 4754 4761 4767
		4776 4777 4812 4813 4826 4827 4881 4882 4888 5105 5106 5125 5126 5129 5132
		5148 5149 5152 5155 5181 5182 5191 5196 5198 5344 5345 5456 5457 5459 5502
		5503 5560 5561 5778 5779 5901 5903 5904 5906 6007 6009 6302 6306 6432 6434
		6437 6514 6515 6534 6538 6539 6540 6549 6682 6683 6693 6890 6892 6909 7466
		7468 7470 7750 7753 7876 7877 7960 7971 7987 8026 8036 8037 8109 8110 8147
		8149 8150 8213 8214 8215 8409 8410 8413 8418 8601 8602 8603 8709 8711 8713
		8762 8764 8766 8896 8924 8953 8988 8991 8993 8995 9004 9005 9006 9010 9016
		9018 9022 9025 9037 9038 9040 9041 9042 9045 9046 9048 9049 9051 9054 9058
		9061 9065 9068 9072 9076 9081 9082 9095 9127 9130 9182 9194 9198 9313 9314
		9315 9317 9318 9322 9327 9328 9417 9418 9429 9430 9488 9489 9491 9493 9539
		9542 9549 9552 9667 9668 9670 9675 10556 10557 10559 10560 10629 10630
14170	POREG	10095 2684 2685 2686 2687 10095
1	P1	229 434 436 1506 1509 1735 1747 1755 2653 2656 2838 2839 4588 5618 5619
		8896 8953 10109 10110 10113 10114 10116 10162 10165 10166 10168 10170 10171 10177
5	P1.PS	4488 4488 4508 4509 4530 4535 4542 4551
2	P2	228 1148 1149 1151 1152 1154 1155 1158 1162 1166 1168 1170 1171 1177 1179
		1180 1183 1184 1187 1189 1195 1200 2082 2096 2184 3058 3062 3137 3236 4609
		4832 4843 4873 4928 5044 5271 5370 5670 7846 7868 7898 7957 8110 9238 9240
		9243 9244 9245 9252 9276 9282
3	P3	227 3062 3065 3075 3078 3084 3085 3092 4612 5043 5381 5443 5445 5448 5449
		5487 5492 5495 5555 5672 5674 5727 5729 5732 6421 6422 7845
4	P4	222 223 1836 1844 1854 1901 2097 2100 2107 2115 2116 2117 2122 2130 4615

CCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.															
		7844	10235														
5	P5	225	226	1436	2095	5091	5092	5120	5121	5143	5144	5187	6423	8094	8242	9896	
		9897	10500	10501	10538	10540	10542	10544	10589	10591	10592	10593	10613	10639			
2272	PAGE2	1731	1726	1731													
2260	PAGER	1718	1463	1718													
5	PA.PSH	6423	6423	6433	6439	6538	6540										
2161	PARCN	1689	634	1689													
607	PARTY	633	580	581	582	589	590	633									
2550	PATBD	2016	2006	2009	2016												
11322	PATSCN	7609	7494	7509	7514	7609											
5	PB.CR	226	226	368	504	510	643	761	764	789	798	939	940	941	943	953	962
		1002	1022	1023	1030												
11003	PCMD	7274	7223	7247	7255	7266	7274										
5462	PERMS	4442	3729	4442	7410												
4122	PFERR	3247	3238	3247													
4126	PFV	3252	3234	3237	3252												
2311	PGCOM	1749	1737	1749													
2301	PGMOR	1741	1718	1741													
34	PH.DCW		2432	4722	5092	6538	8037	8410	9315	9318	9668						
2	PH.PAT		1067	2001	2176	2420	3064	3212	3675	4873	4928	7877	8110	9240			
16	PH.PTO		4568	6540													
0	PH.SSA		2179														
12	PH.USL		1152	9491	9493												
2	PI.ABS	10229	10229	10232	10233	10370	10372	10374	10375	10377	10378	10380	10381	10424	10425	10426	10428
			10429	10431	10434	10435	10437	10440	10442	10446	10447	10450	10451	10454	10455	10458	10459
1	PI.KL	10228	10228	10234	10238	10265	10276	10298	10309	10343	10348	10349	10355	10420	10464	10467	10468
			10470	10503	10632												
231	PINT	336	19	336													
4	P.CC	9803	9803	9919													
7	P.CR		260	263	267	269	311	312	321	323	324	340	355	357	359	360	366
			371	372	379	389	390	397	402	407	409	419	431	433	443	543	546
			556	557	561	562	795	797	811	834	835	841	842	850	854	857	862
			871	875	876	878	881	882	883	885	897	909	920	922	924	926	927
			929	931	954	961	963	969	978	982	1008	1028	1087	1089	1091	1098	1109
			1117	1122	1130	1132	1133	1136	1267	1285	1289	1294	1301	1303	1328	1331	1350
			1353	1399	1400	1401	1404	1405	1408	1412	1414	1419	1426	1427	1430	1455	1466
			1487	1489	1492	1507	1512	1513	1515	1526	1534	1545	1547	1549	1553	1564	1571
			1576	1578	1579	1594	1616	1629	1642	1646	1759	1806	1845	1848	1906	1908	1912
			1933	1944	1948	1949	1955	1956	1972	1983	2013	2024	2028	2030	2037	2042	2047
			2054	2159	2164	2169	2277	2279	2280	2281	2296	2326	2327	2328	2329	2331	2333
			2335	2337	2339	2366	2367	2372	2375	2399	2402	2405	2407	2413	2416	2445	2482
			2518	2519	2520	2564	2565	2584	2585	2625	2626	2627	2629	2631	2633	2668	2706
			2707	2713	2714	2715	2720	2754	2755	2775	2780	2822	2823	2825	2833	2836	2867
			2869	2872	2886	2889	2901	2911	2919	2921	2927	2930	2936	2990	3014	3073	3186
			3190	3203	3264	3266	3301	3304	3312	3316	3323	3338	3339	3348	3359	3369	3375
			3380	3400	3403	3425	3429	3432	3434	3440	3443	3447	3464	3683	3684	3686	3690
			3691	3692	3700	3702	3703	3711	3714	4372	4879	4894	4901	4986	5208	5308	5313
			5341	5378	5382	5391	5401	5412	5415	5416	5441	5450	5455	5462	5470	5476	5478
			5484	5485	5488	5489	5501	5511	5515	5528	5530	5533	5536	5537	5545	5546	5547
			5549	5550	5569	5580	5582	5583	5620	5625	5628	5633	5636	5641	5645	5646	5648

OCTAL SYMBOL REFERENCES BY SEQUENCE NO.

			5656	5658	5663	5673	5675	5680	5681	5690	5691	5698	5700	5708	5712	5714	5724
			5730	5748	5749	5758	5899	5902	5947	5952	5954	5958	5960	5995	6000	6036	6050
			6078	6082	6084	6092	6095	6099	6102	6106	6110	6112	6116	6119	6122	6140	6150
			6152	6155	6161	6176	6234	6300	6301	6305	6308	6335	6336	6348	6356	6357	6358
			6372	6448	6454	6457	6472	6501	6505	6574	6575	6601	6607	6620	6622	6646	6672
			6720	6786	6825	6831	6833	6838	6876	6877	6878	6881	6885	6887	6896	6898	6904
			6906	6911	6925	6926	6936	6937	6939	6940	6943	6945	6947	6956	7041	7049	7465
			7733	7869	8148	8255	8257	8259	8263	8264	8290	8292	8298	8301	8302	8355	8389
			8421	8433	8472	8550	8607	8610	8710	8763	8793	8816	8849	8935	9067	9071	9265
			9413	9425	9438	9444	9589	9679	9681	9841	9867	9924	9938	9941	9945	9950	9954
			9962	10000	10005	10006	10007	10008	10021	10029	10036	10038	10103	10137	10239	10258	10299
			10314	10318	10331	10358	10386	10474	10522	10523	10525	10527	10529	10530	10535	10537	10539
			10541	10543	10545	10550	10551	10554	10557	10565	10567	10568	10570	10584	10585	10590	10595
			10607														
4	P.DATA	7844	5370	5395	5398	5423	5430	5435	5447	5552	7844	7971	7975	7987	8004	8021	8026
			8037	8041	8056	8076	8079	8094	8095	8096	8102						
2	P.DDD	7846	222	707	1304	1413	1431	1563	1565	7846							
3	P.EMB	6422	6422	6442	6550	6568	6570	6576	6577	6584	6585	6589	6590	6594	6595	6612	6613
			6618	6644	6655	6656	6694	6696	6703	6705	6706	6735	6736	6755	6757	6765	6776
			6781	6800	6802	6819	6830	6832	6875	6907	6941	7006	7007	7009	7011	7017	7019
			7057	7059	7077	7084	7088	7091	7095	7096	7098	7100	8266	8304			
5	P.IMW	225	225	279	281	413											
3	P.IOCB	5043	3699	3708	3845	4200	4206	4214	4335	4341	4489	4509	4513	4531	4548	4628	4633
			4634	4636	4662	4664	4668	4689	4874	4925	4936	5043	5047	5053	5093	5108	5165
			7227	7233	7237	7252	7267										
1	P.I00	229	229	369	374	376	393	708	709	1010	1012	1031	1033	1034	1035	1068	1069
			1081	1096	1145	1159	1174	1188	1191	1193	1199	1201	1220	1222	1230	1233	1234
			1235	1236	1262	1265	1270	1273	1281	1315	1335	1348	1349	1355	1462	1556	1589
			1601	1634	1635	1637	1638	1724	1725	1728	1730	1733	1743	1746	1762	1763	1843
			1849	1852	1853	1903	1904	1931	1940	1953	1964	1970	1998	2007	2020	2065	2089
			2092	2157	2161	2167	2273	2274	2287	2310	2312	2314	2334	2345	2378	2384	2387
			2393	2410	2418	2429	2434	2437	2440	2446	2466	2479	2484	2493	2494	2499	2505
			2508	2511	2538	2543	2659	2660	2750	2764	2777	2798	2804	2809	2878	2880	2900
			2906	2908	2924	2933	2935	2941	2970	2972	3042	3089	3090	3095	3096	3098	3144
			3162	3165	3176	3188	3192	3214	3215	3223	3235	3239	3258	3261	3269	3273	3276
			3282	3287	3342	3344	3360	3361	3362	3370	3377	3378	3379	3385	3389	3393	3395
			3397	3419	3430	3485	3486	3495	3612	3613	3615	3616	3618	3634	3640	3646	3647
			3648	3672	3693	3696	3756	3762	3764	3765	3768	3770	3771	3781	3782	3785	3787
			3788	3789	3793	3799	3802	3803	3815	3819	3836	3837	3841	3899	3903	3940	3941
			3945	3981	3983	3984	3988	3997	3998	4011	4013	4017	4055	4057	4058	4061	4062
			4069	4072	4076	4078	4079	4089	4090	4102	4105	4131	4132	4135	4139	4142	4144
			4147	4149	4156	4157	4165	4191	4192	4194	4195	4203	4207	4215	4219	4220	4221
			4224	4235	4236	4238	4239	4240	4241	4242	4243	4244	4245	4246	4253	4256	4266
			4268	4272	4273	4281	4287	4297	4298	4300	4301	4302	4305	4308	4321	4322	4325
			4332	4338	4342	4359	4363	4376	4443	4529	4536	4543	4547	4548	4552	4554	4560
			4562	4563	4566	4602	4603	4604	4605	4609	4612	4615	4626	4627	4631	4643	4649
			4652	4663	4665	4669	4673	4679	4697	4698	4700	4731	4733	4734	4736	4740	4753
			4755	4756	4758	4762	4764	4768	4798	4799	4804	4805	4808	4810	4811	4816	4817
			4822	4824	4825	4830	4835	4847	4861	4919	4932	4948	4954	4959	4969	4975	4979
			4987	4992	4996	4998	5001	5002	5054	5075	5088	5107	5117	5134	5136	5140	5157

CCTAL SYMBCL REFERENCES BY SEQUENCE NO.

CCTAL	SYMBCL	REFERENCES BY SEQUENCE NO.
5552	SNDDD	4539 4534 4539
6	SNDTHR	8960 8945 8960
3421	SOPDS	2667 2577 2667
6251	SPANY	4934 4839 4934
3443	SPCMD	2705 2705 2973
2157	SPCNT	1687 950 952 1687
1100	SPD1	920 920 933
1073	SPDPSI	907 855 907 6347 6379
1070	SPDX	903 903 912
1013	SPLT1	845 834 845
1000	SPLTR	832 827 832
2160	SPOVF	1688 770 1688
11260	SPREQ	7533 7482 7533 7820
11300	SPRQB1	7560 7550 7560
11304	SPRQB2	7568 7568 7691
11272	SPRQB	7547 7537 7547
11306	SPRQBR	7574 7562 7564 7574
11314	SPRQF1	7582 7582 7704
11312	SPRQFR	7579 7556 7579
6620	SPUNK	5267 19 5267
11317	SPXIT	7589 7538 7589 7661
3342	SRBLK	2582 2558 2582
7764	SRCH1	6358 6358 6367
3333	SRLC1	2570 2570 2591 2593
3332	SRLC2	2566 2566 2588
1361	SRMFC	1161 1161 1165 1167
1406	SRMNC	1182 1176 1182
1412	SRMOD	1187 1173 1181 1187
1430	SRMT2	1201 1148 1157 1163 1172 1185 1201
1334	SRMT	1140 1088 1140
4625	SRPC2	3796 3796 4309
4614	SRPCK	3784 3773 3784 4106
200000	SSCHED	9807 9807 9936
3676	SSPCM	2968 1445 2968
5460	SSRXX	4429 4400 4429
12350	STBLD	8512 8508 8512
12334	STFRE	8491 8491 8510 8515 8520
7707	STGPC	6257 1456 2945 3436 6257
10654	STIO3	7108 5898 6195 6232 6258 6944 6955 7108 8271 8320
7347	STIO	5897 395 890 2290 2721 2992 3450 5343 5543 5777 5897
12344	STKEP	8507 8489 8507
7370	STNML	5945 5911 5916 5945
2451	STO34	1927 1921 1927
2500	STO89	1958 1950 1958
13621	STOCMD	9909 9904 9909
1767	STOP	1515 1515 1527
6402	STOPN	5074 5068 5074
2705	STP1	2135 2116 2130 2135
2706	STP2	2136 1901 2097 2136
7675	STRCR	6233 5917 6233

OCTAL	SYMBOL	REFERENCES BY SEQUENCE NO.									
3036	STRET	2306	476	1357	2293	2306	3250	3478	4019	5318	10068
12353	STRMV	8517	8509	8517							
7570	STRT	6114	5967	6114							
7256	STSKA	5693	5693	5750							
7674	STSPC	6207	2708	6207							
16410	STVEC	10623	10556	10623							
2614	STYP	2058	2050	2058							
3303	SYOTCC	2527	2509	2512	2527						
5627	SYSEN2	4594	4594	4599							
3547	SYSERR	2812	2806	2812							
2447	SYSPG	1923	1917	1923							
16537	TABLE	10707	10385	10388	10707						
6604	TABS1	5244	5195	5244							
6612	TABS2	5251	5197	5251							
16313	TAPEA	10548	10532	10548							
434	TAR	481	289	404	481						
4544	TCOFF	3710	3683	3710							
7771	TCX1	6363	6351	6363	6377	6389					
20000	TDCW	7852	7852	7979	8022	8081	8084				
3604	TEMP	2845	2758	2773	2783	2791	2841	2842	2845		
650	TEMST	673	571	597	645	673					
3715	TERRT	3041	1449	3041							
2361	TEST3	1822	1810	1812	1816	1822					
515	TESTCH	563	556	563							
427	TGATE	479	381	387	463	467	474	479			
3465	TGEPR	2749	1442	2749							
3605	TGSPC	2865	1443	2865							
7552	THERE	6097	6075	6093	6097						
12	THRCNT	8927	8927	8932							
12626	THROVR	8941	8933	8941							
1547	THRSO	1308	1307	1308							
12643	THRTIM	8962	8939	8962							
1321	TIME	1126	1119	1123	1126						
652	TIMEX	691	423	691	960	1491					
1774	TMOR1	1520	1471	1495	1498	1520					
2001	TMOR2	1525	1480	1522	1525						
1715	TMOR	1461	714	1461							
12631	TNOT	8944	8937	8944							
12632	TNOVER	8945	8930	8940	8943	8945					
10405	TOEX2	6816	6724	6737	6783	6791	6805	6812	6816		
10410	TOEX41	6823	6778	6823	7023	7060	7102				
10402	TOEX4	6810	6723	6796	6810						
10400	TOEXS	6807	6751	6807							
7302	TPCFG	5722	5710	5722							
7257	TPSKA	5695	5677	5695	5761						
744	TRAGN	791	791	955							
1661	TRCOFF	1428	988	1399	1428						
3710	TREAD	3008	1448	3008							
3451	TRLCL	2712	2703	2712	2971						
3440	TRLCH	2700	1356	2700	2843						

OCTAL SYMBCL REFERENCES BY SEQUENCE NO.

2745	XWSR	2152	2152	2171	2183
113	XXX	10181	10180	10181	
3322	YULNK	2553	2547	2553	
13277	ZOP17	9449	9391	9395	9449
13276	ZOP77	9446	9436	9446	
4256	ZOPX4	3365	3160	3365	3376

** 52K LIMITS NEEDED FOR THIS ASSEMBLY.
**GFRC READ 2438 AND PUNCHED NONE COMDK CARDS

SNUMB = 1245T, ACTIVITY # = 02, , REPORT CODE = 73, RECORD COUNT = 000001

1 LBL IOSO,H66COJ7.002

IOS00025

