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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
3          COPY LOG7A40          ** MAP EC HISTORY **
4          *****
5          *** PREREQUISITES ***
6          NONE
7          *****
8          *** MODIFICATIONS ***
9          CHANGES MADE TO CORRECT ERRORS FOUND WHILE IN TEST
10         *****
11         *** REA'S INCORPORATED ***
12         27-12159
13         *****
14         *** SPECIAL INSTRUCTIONS ***
15         NONE
16         *****
17         *** E. C. HISTORY ***
18         DATE 17AUG78 DATE 02OCT78 DATE 10JAN79 DATE
19         E.C. 755391 E.C. 375102 E.C. 375222 E.C.
20         *****
21         I7A40 START X'2500' START ADDRESS OF ALL 'I' TYPE PROG
22         @QUES EQU X'0100' EQUATED VALUE FOR MDI STATEMENT
23         @FIXT EQU X'0101' EQUATED VALUE FOR MDI STATEMENT
24         @STOP EQU X'0102' EQUATED VALUE FOR MDI STATEMENT
25         @GOTO EQU X'0200' EQUATED VALUE FOR MDI STATEMENT
26         @CALL EQU X'0300' EQUATED VALUE FOR MDI STATEMENT
27         @INPT EQU X'0301' EQUATED VALUE FOR MDI STATEMENT
28         @UXX EQU X'0400' EQUATED VALUE FOR MDI STATEMENT
29         @UXX EQU X'0500' EQUATED VALUE FOR MDI STATEMENT
30         @NVLD EQU X'0600' EQUATED VALUE FOR MDI STATEMENT
31         @ EQU X'0000' EQUATE FOR EQUAL
32         @NE EQU X'0004' EQUATE FOR NOT EQUAL
33         @HI EQU X'0008' EQUATE FOR HIGH
34         @NH EQU X'000C' EQUATE FOR NOT HIGH
35         @LO EQU X'0010' EQUATE FOR LOW
36         @NL EQU X'0014' EQUATE FOR NOT LOW
37         @LT EQU X'0018' EQUATE FOR LESS THAN
38         @LE EQU X'000C' EQUATE FOR LESS THAN OR EQUAL TO
39         @GT EQU X'0018' EQUATE FOR GREATER THAN
40         @GE EQU X'001C' EQUATE FOR GREATER THAN OR EQUAL TO
41         @ON EQU X'0200' EQUATE FOR ON
42         @OF EQU X'0202' EQUATE FOR OFF
43         @MX EQU X'0204' EQUATE FOR MIXED
44         @EBC EQU X'0000' EQUATE FOR EBCDIC DATA TRANSFER
45         @HEX EQU X'0001' EQUATE FOR HEX DATA TRANSFER
46         @XTRNL EQU X'0001' EQUATE FOR EXTERNAL REFERENCE
47         @INTRNL EQU X'0000' EQUATE FOR INTERNAL REFERENCE
48         @PARM EQU X'0000' EQUATE INDICATING PARAMETER
49         @DA EQU X'0001' EQUATE FOR DEVICE ADDRESS
50         @UA EQU X'0002' EQUATE FOR UNIT ADDRESS
51         @DUMMY EQU *X'0000' DUMMY EQUATE
52         @D EQU *X'0000' ADDRESS OF HDI HEADER
53         @PTYPE EQU *-X'22CE' ADDRESS OF PROCESSOR TYPE FIELD
54         @STEPNUM EQU PID+X'000C' ADDRESS OF DECIMAL STEP NUMBER
55         @OPWD1 EQU PID+X'000E' ADDRESS OF OPTION WORD ONE
56         @OPWD2 EQU PID+X'0010' ADDRESS OF OPTION WORD TWO
57         @TUSTATUS EQU PID+X'0018' ADDRESS OF TU STATUS WORD
58         @TUWORK EQU PID+X'001A' ADDRESS OF TU WORK AREA
59         @TUPARM1 EQU PID+X'009A' ADDRESS OF PARM 1 POINTER
60         @TUPARM2 EQU PID+X'009C' ADDRESS OF PARM 2 POINTER
61         @TUPARM3 EQU PID+X'009E' ADDRESS OF PARM 3 POINTER
62         @TUPARM4 EQU PID+X'00A0' ADDRESS OF PARM 4 POINTER
63         @TUPARM5 EQU PID+X'00A2' ADDRESS OF PARM 5 POINTER
64         @TUPARM6 EQU PID+X'00A4' ADDRESS OF PARM 6 POINTER
65         @TUPARM7 EQU PID+X'00A6' ADDRESS OF PARM 7 POINTER
66         @TUPARM8 EQU PID+X'00A8' ADDRESS OF PARM 8 POINTER
67         @TUPARM9 EQU PID+X'00AA' ADDRESS OF PARM 9 POINTER
68         @TUPARM10 EQU PID+X'00AC' ADDRESS OF PARM 10 POINTER
69         @TUPARM11 EQU PID+X'00AE' ADDRESS OF PARM 11 POINTER
70         @TUPARM12 EQU PID+X'00B0' ADDRESS OF PARM 12 POINTER
71         @TUPARM13 EQU PID+X'00B2' ADDRESS OF PARM 13 POINTER
72         @TUPARM14 EQU PID+X'00B4' ADDRESS OF PARM 14 POINTER
73         @TUPARM15 EQU PID+X'00B6' ADDRESS OF PARM 15 POINTER
74         @TUPARM16 EQU PID+X'00B8' ADDRESS OF PARM 16 POINTER
75         @TUNSGWTR EQU PID+X'00BA' ADDRESS OF -> TO COMMON MSG WRITER
76         @TUDA EQU PID+X'00BE' ADDRESS OF UNIT ADDRESS IN EBC
77         @TUBUFF EQU PID+X'00C2' ADDRESS OF LAST USED WORD IN MAP
78         @TULAST EQU PID+X'00C4' ADDRESS OF LAST ADDRESSABLE WORD
79         @TURESULN EQU PID+X'00C6' ADDRESS OF LENGTH OF TU RESULTS
80         @TURESUL EQU PID+X'00C8' ADDRESS OF TU RESULTS FIELD
81         @MAPNAME EQU PID+X'00FC' ADDRESS OF MAP NAME FIELD IN HEX
82         @TUINPT EQU PID+X'0148' ADDRESS OF $INPT DATA
83         @PARMARA EQU PID+X'01FE' ADDRESS OF $INPT INPUT AREA
84         @DCADD1 EQU PID+X'01B8' MDI POINTER
85         @DCADD2 EQU PID+X'01BA' MDI POINTER
86         @SUPSTAT EQU PID+X'01C4' ADDRESS OF MDI STATUS
87         @DEVADD EQU PID+X'01D0' ADDRESS OF DEVICE ADDRESS TABLE 0
88         @DEVADD1 EQU PID+X'01D4' ADDRESS OF DEVICE ADDRESS TABLE 1
89         @DEVADD2 EQU PID+X'01E4' ADDRESS OF DEVICE ADDRESS TABLE 2
90         @DEVADD3 EQU PID+X'01E8' ADDRESS OF DEVICE ADDRESS TABLE 3
91         @DEVADD4 EQU PID+X'01F8' ADDRESS OF DEVICE ADDRESS TABLE 4
92         @DEVADD5 EQU PID+X'0202' ADDRESS OF DEVICE ADDRESS TABLE 5
93         @DEVADD6 EQU PID+X'020C' ADDRESS OF DEVICE ADDRESS TABLE 6
94         @DEVADD7 EQU PID+X'0216' ADDRESS OF DEVICE ADDRESS TABLE 7
95         PPRINT OFF

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000201
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000232
00180C
001810
001818
00181A
00189A
00189C
00189E
0018A0
0018A2
0018A4
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0018AA
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0018C0
0018C2
0018C4
0018C6
0018C8
0018FC
001948
00195E
0019B8
0019BA
0019C4
0019D0
0019D4
0019E4
0019E8
0019F8
001A02
001A0C
001A16

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

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LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
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421			**	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
000024			EQU 0036	
002592	2792		DC AL2(N00037)	
002594	0037		DC XL2'0037'	
000025			EQU 0037	
002596	279E		DC AL2(N00038)	
002598	0038		DC XL2'0038'	
000026			EQU 0038	
00259A	27A2		DC AL2(N00039)	
00259C	0039		DC XL2'0039'	
000027			EQU 0039	
00259E	27B6		DC AL2(N00040)	
0025A0	0040		DC XL2'0040'	
000028			EQU 0040	
0025A2	27B8		DC AL2(N00041)	
0025A4	0041		DC XL2'0041'	
000029			EQU 0041	
0025A6	27D6		DC AL2(N00042)	
0025A8	0042		DC XL2'0042'	
00002A			EQU 0042	
0025AA	27F4		DC AL2(N00043)	
0025AC	0043		DC XL2'0043'	
00002B			EQU 0043	
0025AE	2800		DC AL2(N00044)	
0025B0	0044		DC XL2'0044'	
00002C			EQU 0044	
0025B2	281E		DC AL2(N00045)	
0025B4	0045		DC XL2'0045'	
00002D			EQU 0045	
0025B6	282A		DC AL2(N00046)	
0025B8	0046		DC XL2'0046'	
00002E			EQU 0046	
0025BA	282E		DC AL2(N00047)	
0025BC	0047		DC XL2'0047'	
00002F			EQU 0047	
0025BE	284C		DC AL2(N00048)	
0025C0	0048		DC XL2'0048'	
000030			EQU 0048	
0025C2	2858		DC AL2(N00049)	
0025C4	0049		DC XL2'0049'	
000031			EQU 0049	
0025C6	0000		DC AL2(DUMMY)	
463			*****	
464			*****	
465			**	
466			**	
467			**	
468			**	
469			**	
470	N00001		\$QUES QT=(Q00083),YES=N00003,CT=(C00076),ST=(S00085)	
471+N00001			DC A(@QUES)	
472+			DC AL2(N00003)	
473 N00002			\$GOTO TYPE=INTRNL,EP=B,FT=(F00097)	
474+N00002			DC A(@GOTO)	
475+			DC A(F00097)	
476+			DC CL4'3C00'	
477+			DC CL2'B'	
478+			DC AL2(INTRNL)	
479 N00003			\$TUXX T7A02,01,00,EQ,QT=(Q00100),YES=N00019,CT=(C00099)	
480+N00003			DC A(@TUXX)	
481+			DC AL2(N00019)	
482+			DC A(T7A07)	
483+			DC AL2(EQ)	
484+			DC AL2(01)	
485+			DC X'00'	
486+			ALIGN WORD	
487+			DC AL2(0)	
488+			DC C'AA'	
489+			ALIGN WORD	
490+			DC AL2(PARMARA)	
491 N00004			\$TUXX T7A02,01,08,OF,QT=(Q00102),YES=N00008	
492+N00004			DC A(@TUXX)	
493+			DC AL2(N00008)	
494+			DC A(T7A02)	
495+			DC AL2(OF)	
496+			DC AL2(01)	
497+			DC X'08'	
498+			ALIGN WORD	
499+			DC AL2(0)	
500+			DC C'AA'	
501+			ALIGN WORD	
502+			DC AL2(PARMARA)	
503 N00005			\$TUXX T7A08,01,C1,EQ,PLNG=01,PARM=@A,YES=N00007,ST=(S00050)	
504+N00005			DC A(@TUXX)	
505+			DC AL2(N00007)	
506+			DC A(T7A08)	
507+			DC AL2(EQ)	
508+			DC AL2(01)	
509+			DC X'C1'	
510+			ALIGN WORD	
511+			DC AL2(01)	
512+			DC C'@A'	
513+			ALIGN WORD	
514+			DC AL2(PARMARA)	
515 N00006			\$MVLDT FT=(F00047)	
516+N00006			DC A(@MVLDT)	
517 N00007			\$CALL TYPE=TRNL,EP=A,MAP=7A21,FT=(F00109),GTO=((7A21,A))	
518+N00007			DC A(@CALL)	
519+			DC A(F00109)	
520+			DC CL4'7A21'	
521+			DC CL2'A'	
522+			DC AL2(XTRNL)	
523 N00008			\$TUXX T7A02,01,40,OF,QT=(Q00112),YES=N00010	
524+N00008			DC A(@TUXX)	
525+			DC AL2(N00010)	
526+			DC A(T7A02)	
527+			DC AL2(OF)	
528+			DC AL2(01)	
529+			DC X'40'	
530+			ALIGN WORD	
531+			DC AL2(0)	
532+			DC C'AA'	
533+			ALIGN WORD	
534+			DC AL2(PARMARA)	
535 N00009			\$GOTO TYPE=XTRNL,MAP=7A78,EP=A,FT=(F00114)	

I7A40 --- DISK WRITE TESTS P/N=8327671 EC=375222 PAGE 03  
 LOCTR OBJECT TEXT STMT SOURCE STATEMENT  
 00262E 0200 536+N00009 DC A (@GOTO)  
 002630 28C2 537+ DC A (F00114)  
 002632 F7C1F7F8 538+ DC CL4'7A78'  
 002636 C140 539+ DC CL2'A'  
 002638 0001 540+ DC AL2 (XTRNL)  
 00263A 0500 541 N00010 \$TUXX T7A02,01,80,OF,QT=(Q00116),YES=N00014  
 00263C 266C 542+N00010 DC A (@TUXX)  
 00263E 2AAE 543+ DC AL2 (N00014)  
 002640 0202 544+ DC A (T7A02)  
 002642 0001 545+ DC AL2 (OF)  
 002644 80 546+ DC AL2 (01)  
 002645 00 547+ DC X'80'  
 002646 0000 548+ ALIGN WORD  
 002648 C1C1 549+ DC AL2 (0)  
 550+ DC C'AA'  
 551+ ALIGN WORD  
 552+ DC AL2 (PARMARA)  
 00264A 196E 553 N00011 \$TUXX T7A08,01,E6,EQ,PLNG=01,PARM=@W,YES=N00013,ST=(S00050)  
 554+N00011 DC A (@TUXX)  
 555+ DC AL2 (N00013)  
 00264C 0500 556+ DC A (T7A08)  
 00264E 2660 557+ DC AL2 (EQ)  
 002650 3A24 558+ DC AL2 (OF)  
 002652 0000 559+ DC X'E6'  
 002654 0001 560+ ALIGN WORD  
 002656 E6 561+ DC AL2 (01)  
 002657 00 562+ DC C'AW'  
 002658 0001 563+ ALIGN WORD  
 00265A 7CE6 564+ DC AL2 (PARMARA)  
 00265C 196E 565 N00012 \$NVLD FT=(F00047)  
 566+N00012 DC A (@NVLD)  
 00265E 0600 567 N00013 \$CALL TYPE=XTRNL,EP=A,MAP=7A21,FT=(F00123),GTO=((7A22,C))  
 568+N00013 DC A (@CALL)  
 002660 0201 569+ DC A (F00123)  
 002662 28D0 570+ DC CL4'7A21'  
 002664 F7C1F2F1 571+ DC CL2'A'  
 002666 C140 572+ DC AL2 (XTRNL)  
 00266A 0001 573 N00014 \$TUXX T7A02,01,10,OF,QT=(Q00127),YES=N00018,CT=(C00126)  
 574+N00014 DC A (@TUXX)  
 00266C 0500 575+ DC AL2 (N00018)  
 00266E 269E 576+ DC A (T7A02)  
 002670 2AAE 577+ DC AL2 (OF)  
 002672 0202 578+ DC AL2 (01)  
 002674 0001 579+ DC X'10'  
 002676 10 580+ ALIGN WORD  
 002677 00 581+ DC AL2 (0)  
 002678 0000 582+ DC C'AA'  
 00267A C1C1 583+ ALIGN WORD  
 584+ DC AL2 (PARMARA)  
 00267C 196E 585 N00015 \$TUXX T7A08,01,E5,EQ,PLNG=01,PARM=@V,YES=N00017,ST=(S00050)  
 586+N00015 DC A (@TUXX)  
 00267E 0500 587+ DC AL2 (N00017)  
 002680 2692 588+ DC A (T7A08)  
 002682 3A24 589+ DC AL2 (EQ)  
 002684 0000 590+ DC AL2 (01)  
 002686 0001 591+ DC X'E5'  
 002688 E5 592+ ALIGN WORD  
 002689 00 593+ DC AL2 (01)  
 00268A 0001 594+ DC C'AV'  
 00268C 7CE5 595+ ALIGN WORD  
 596+ DC AL2 (PARMARA)  
 00268E 196E 597 N00016 \$NVLD FT=(F00047)  
 598+N00016 DC A (@NVLD)  
 002690 0600 599 N00017 \$CALL TYPE=XTRNL,EP=A,MAP=7A21,FT=(F00134),GTO=((7A21,A))  
 600+N00017 DC A (@CALL)  
 002692 0201 601+ DC A (F00134)  
 002694 28EA 602+ DC CL4'7A21'  
 002696 F7C1F2F1 603+ DC CL2'A'  
 00269A C140 604+ DC AL2 (XTRNL)  
 00269C 0001 605 N00018 \$FIXT FT=(F00137)  
 606+N00018 DC A (@FIXT)  
 0026A0 0101 607+ DC A (F00137)  
 2904 608 N00019 \$TUXX T7A54,01,10,OF,QT=(Q00140),YES=N00021,CT=(C00139)  
 609+N00019 DC A (@TUXX)  
 0026A2 0500 610+ DC AL2 (N00021)  
 0026A4 26B8 611+ DC A (T7A54)  
 0026A6 3BB0 612+ DC AL2 (OF)  
 0026A8 0202 613+ DC AL2 (01)  
 0026AA 0001 614+ DC X'10'  
 0026AC 10 615+ ALIGN WORD  
 0026AD 00 616+ DC AL2 (0)  
 0026AE 0000 617+ DC C'AA'  
 0026B0 C1C1 618+ ALIGN WORD  
 619+ DC AL2 (PARMARA)  
 0026B2 196E 620 N00020 \$FIXT FT=(F00142)  
 621+N00020 DC A (@FIXT)  
 0026B4 0101 622+ DC A (F00142)  
 2926 623 N00021 \$TUXX T7A08,03,000004,ON,QT=(Q00146),YES=N00023,CT=(C00145)  
 624+N00021 DC A (@TUXX)  
 0026B8 0500 625+ DC AL2 (N00023)  
 0026BA 26D8 626+ DC A (T7A08)  
 0026BC 3A24 627+ DC AL2 (ON)  
 0026BE 0200 628+ DC AL2 (03)  
 0026C0 0003 629+ DC X'000004'  
 0026C2 000004 630+ ALIGN WORD  
 0026C4 0000 631+ DC AL2 (0)  
 0026C6 0000 632+ DC C'AA'  
 0026C8 C1C1 633+ ALIGN WORD  
 634+ DC AL2 (PARMARA)  
 0026CA 196E 635 N00022 \$GOTO TYPE=INTRNL,EP=B,FT=(F00148)  
 636+N00022 DC A (@GOTO)  
 0026CC 0200 637+ DC A (F00148)  
 0026CE 2956 638+ DC CL4'3C00'  
 0026D0 F3C3F0F0 639+ DC CL2'B'  
 0026D4 C240 640+ DC AL2 (INTRNL)  
 0026D6 0000 641+N00023 \$TUXX T7A17,01,00,EQ,QT=(Q00151),YES=N00039,CT=(C00150)  
 642+N00023 DC A (@TUXX)  
 0026D8 0500 643+ DC AL2 (N00039)  
 0026DA 27A2 644+ DC A (T7A17)  
 0026DC 3ABA 645+ DC AL2 (EQ)  
 0026DE 0000 646+ DC AL2 (01)  
 0026E0 0001 647+ DC X'00'  
 0026E2 00 648+ ALIGN WORD  
 0026E3 00 649+ DC AL2 (0)  
 0026E4 0000

I7A40 --- DISK WRITE TESTS P/N=8327671 EC=375222 PAGE 03A  
 LOCTR OBJECT TEXT STMT SOURCE STATEMENT  
 0026E6 C1C1 650+ DC C'AA'  
 651+ ALIGN WORD  
 652+ DC AL2 (PARMARA)  
 0026E8 196E 653 N00024 \$TUXX T7A02,01,08,OF,QT=(Q00153),YES=N00028  
 654+N00024 DC A (@TUXX)  
 0026EA 0500 655+ DC AL2 (N00028)  
 0026EC 271C 656+ DC A (T7A02)  
 0026EE 2AAE 657+ DC AL2 (OF)  
 0026F0 0202 658+ DC AL2 (01)  
 0026F2 0001 659+ DC X'08'  
 0026F4 08 660+ ALIGN WORD  
 0026F6 00 661+ DC AL2 (0)  
 0026F8 0000 662+ DC C'AA'  
 0026FA C1C1 663+ ALIGN WORD  
 664+ DC AL2 (PARMARA)  
 0026FC 196E 665 N00025 \$TUXX T7A08,01,C1,EQ,PLNG=01,PARM=@A,YES=N00027,ST=(S00050)  
 666+N00025 DC A (@TUXX)  
 0026FE 0500 667+ DC AL2 (N00027)  
 002700 2710 668+ DC A (T7A08)  
 002702 3A24 669+ DC AL2 (EQ)  
 002704 0000 670+ DC AL2 (OF)  
 002706 0001 671+ DC X'C1'  
 002708 00 672+ ALIGN WORD  
 00270A 0001 673+ DC AL2 (01)  
 00270C 7CC1 674+ DC C'AA'  
 00270E 196E 675+ ALIGN WORD  
 676+ DC AL2 (PARMARA)  
 002710 0600 677 N00026 \$NVLD FT=(F00047)  
 678+N00026 DC A (@NVLD)  
 002712 0201 679 N00027 \$CALL TYPE=XTRNL,EP=A,MAP=7A21,FT=(F00160),GTO=((7A21,A))  
 002714 296E 680+N00027 DC A (@CALL)  
 002716 F7C1F2F1 681+ DC A (F00160)  
 002718 C140 682+ DC CL4'7A21'  
 00271A 0001 683+ DC CL2'A'  
 684+ DC AL2 (XTRNL)  
 00271C 0500 685 N00028 \$TUXX T7A02,01,40,OF,QT=(Q00163),YES=N00030  
 00271E 273A 686+N00028 DC A (@TUXX)  
 002720 2AAE 687+ DC AL2 (N00030)  
 002722 0202 688+ DC A (T7A02)  
 002724 0001 689+ DC AL2 (OF)  
 002726 40 690+ DC AL2 (01)  
 002728 00 691+ DC X'40'  
 00272A 0000 692+ ALIGN WORD  
 00272C C1C1 693+ DC AL2 (0)  
 694+ DC C'AA'  
 695+ ALIGN WORD  
 696+ DC AL2 (PARMARA)  
 00272E 0200 697 N00029 \$GOTO TYPE=XTRNL,MAP=7A78,EP=A,FT=(F00165)  
 698+N00029 DC A (@GOTO)  
 002730 2988 699+ DC A (F00165)  
 002732 F7C1F7F8 700+ DC CL4'7A78'  
 002734 C140 701+ DC CL2'A'  
 002736 0001 702+ DC AL2 (XTRNL)  
 00273A 0500 703 N00030 \$TUXX T7A02,01,80,OF,QT=(Q00167),YES=N00034  
 00273C 276C 704+N00030 DC A (@TUXX)  
 00273E 2AAE 705+ DC AL2 (N00034)  
 002740 0202 706+ DC A (T7A02)  
 002742 0001 707+ DC AL2 (OF)  
 002744 80 708+ DC AL2 (01)  
 002746 00 709+ DC X'80'  
 002748 0000 710+ ALIGN WORD  
 00274A C1C1 711+ DC AL2 (0)  
 712+ DC C'AA'  
 713+ ALIGN WORD  
 714+ DC AL2 (PARMARA)  
 00274C 196E 715 N00031 \$TUXX T7A08,01,E6,EQ,PLNG=01,PARM=@W,YES=N00033,ST=(S00050)  
 716+N00031 DC A (@TUXX)  
 00274E 0500 717+ DC AL2 (N00033)  
 002750 2760 718+ DC A (T7A08)  
 002752 3A24 719+ DC AL2 (EQ)  
 002754 0000 720+ DC AL2 (OF)  
 002756 0001 721+ DC X'E6'  
 002758 00 722+ ALIGN WORD  
 00275A 0001 723+ DC AL2 (01)  
 724+ DC C'AW'  
 725+ ALIGN WORD  
 00275C 196E 726+ DC AL2 (PARMARA)  
 727 N00032 \$NVLD FT=(F00047)  
 728+N00032 DC A (@NVLD)  
 00275E 0600 729 N00033 \$CALL TYPE=XTRNL,EP=A,MAP=7A21,FT=(F00174),GTO=((7A22,C))  
 730+N00033 DC A (@CALL)  
 002760 0201 731+ DC A (F00174)  
 002762 2996 732+ DC CL4'7A21'  
 002764 F7C1F2F1 733+ DC CL2'A'  
 002766 C140 734+ DC AL2 (XTRNL)  
 00276A 0001 735 N00034 \$TUXX T7A02,01,10,OF,QT=(Q00178),YES=N00038,CT=(C00177)  
 736+N00034 DC A (@TUXX)  
 00276C 0500 737+ DC AL2 (N00038)  
 00276E 279E 738+ DC A (T7A02)  
 002770 2AAE 739+ DC AL2 (OF)  
 002772 0202 740+ DC AL2 (01)  
 002774 0001 741+ DC X'10'  
 002776 10 742+ ALIGN WORD  
 002778 00 743+ DC AL2 (0)  
 00277A 0000 744+ DC C'AA'  
 00277C C1C1 745+ ALIGN WORD  
 746+ DC AL2 (PARMARA)  
 00277E 196E 747 N00035 \$TUXX T7A08,01,E5,EQ,PLNG=01,PARM=@V,YES=N00037,ST=(S00050)  
 748+N00035 DC A (@TUXX)  
 002780 0500 749+ DC AL2 (N00037)  
 002782 2792 750+ DC A (T7A08)  
 002784 3A24 751+ DC AL2 (EQ)  
 002786 0000 752+ DC AL2 (OF)  
 002788 0001 753+ DC X'ES'  
 00278A E5 754+ ALIGN WORD  
 00278C 00 755+ DC AL2 (01)  
 00278E 0001 756+ DC C'AV'  
 757+ ALIGN WORD  
 002788 196E 758+ DC AL2 (PARMARA)  
 00278A 0500 759 N00036 \$NVLD FT=(F00047)  
 00278C 2792 760+N00036 DC A (@NVLD)  
 002790 0600 761 N00037 \$CALL TYPE=XTRNL,EP=A,MAP=7A21,FT=(F00185),GTO=((7A21,A))  
 002792 0201 762+ DC A (@CALL)  
 002794 29B0 763+ DC A (F00185)

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002796 F7C1F2F1 764+ DC CL4'7A21'
00279A C140 765+ DC CL2'A'
00279C 0001 766+ DC AL2(XTRNL)
00279E 0101 767 N00038 \$FIXT FT=(F0018B)
0027A0 29CA 768+ N00038 DC A(F0018B)
0027A2 0500 770 N00039 \$TUXX T7A06,13,82,EQ,PLNG=4,PARM=0001,QT=(Q00208),YES=N00041, X
0027A4 27B8 771+ N00039 DC A(@TUXX)
0027A6 2FF2 772+ DC AL2(N00041)
0027A8 0000 773+ DC A(T7A06)
0027AA 0001 774+ DC AL2(EQ)
0027AC 82 775+ DC AL2(1)
0027AD 00 776+ DC X'82'
0027AE 0004 777+ ALIGN WORD
0027B0 F0F0F0F1 778+ DC AL2(4)
0027B4 196E 779+ DC C'0001'
0027B6 0600 780+ ALIGN WORD
0027B8 0500 781+ DC AL2(PARMARA)
0027BA 282E 782 N00040 \$NVLD FT=(F00047)
0027BC 3A24 783+ N00040 DC A(@NVLD)
0027BE 0200 784 N00041 \$TUXX T7A08,13,000000000000DC03E600205018,ON,QT=(Q00211), X
0027C0 000000000000DC03E 785+ N00041 DC A(@TUXX)
0027C2 00 786+ DC AL2(N00047)
0027C4 00 787+ DC A(T7A08)
0027C6 00 788+ DC AL2(ON)
0027C8 00 789+ DC AL2(13)
0027CA 00 790+ DC X'000000000000DC03E600205018'
0027CC 00 791+ ALIGN WORD
0027CE 00 792+ DC AL2(0)
0027D0 C1C1 793+ DC C'AA'
0027D2 196E 794+ ALIGN WORD
0027D4 0500 795+ DC AL2(PARMARA)
0027D6 2800 796 N00042 \$TUXX T7A02,13,000000000000DC13E600204018,ON,QT=(Q00214), X
0027DA 2AAE 797+ N00042 DC A(@TUXX)
0027DC 0200 798+ DC AL2(N00044)
0027DE 000D 799+ DC A(T7A02)
0027E0 000000000000DC13E 800+ DC AL2(ON)
0027E2 00 801+ DC AL2(13)
0027E4 00 802+ DC X'000000000000DC13E600204018'
0027E6 00 803+ ALIGN WORD
0027E8 00 804+ DC AL2(0)
0027EA C1C1 805+ DC C'AA'
0027EC 196E 806+ ALIGN WORD
0027EE 0201 807+ DC AL2(PARMARA)
0027F0 29EC 808 N00043 \$CALL TYPE=XTRNL,MAP=7A51,EP=A,FT=(F00074),GTO=(7A51,A)
0027F2 F7C1F5F1 809+ N00043 DC A(@CALL)
0027F4 C140 810+ DC A(F00074)
0027F6 0001 811+ DC CL4'7A51'
0027F8 0500 812+ DC CL2'A'
0027FA 285A 813+ DC AL2(XTRNL)
0027FC 2AAE 814 N00044 \$TUXX T7A02,13,0000000000003AC0100DFBFE7,OF,QT=(Q00220), X
0027FE 0202 815+ N00044 DC A(@TUXX)
002800 000D 816+ DC AL2(N00046)
002802 0000000000003AC0 817+ DC A(T7A02)
002804 00 818+ DC AL2(OF)
002806 00 819+ DC AL2(13)
002808 00 820+ DC X'0000000000003AC0100DFBFE7'
00280A 00 821+ ALIGN WORD
00280C 00 822+ DC AL2(0)
00280E C1C1 823+ DC C'AA'
002810 196E 824+ ALIGN WORD
002812 0201 825+ DC AL2(PARMARA)
002814 29EC 826 N00045 \$CALL TYPE=XTRNL,MAP=7A51,EP=A,FT=(F00074),GTO=(7A51,A)
002816 F7C1F5F1 827+ N00045 DC A(@CALL)
002818 C140 828+ DC A(F00074)
00281A 0001 829+ DC CL4'7A51'
00281C 0500 830+ DC CL2'A'
00281E 285A 831+ DC AL2(XTRNL)
00281F 2AAE 832 N00046 \$FIXT FT=(F00234)
002820 0202 833+ N00046 DC A(@FIXT)
002822 C140 834+ DC A(F00234)
002824 0001 835 N00047 \$TUXX T7A02,13,0000000000003AC0100DFAFE7,OF,QT=(Q00226), X
002826 0500 836+ N00047 DC A(@TUXX)
002828 2858 837+ DC AL2(N00049)
00282A 2AAE 838+ DC A(T7A02)
00282C 0202 839+ DC AL2(OF)
00282E 0000000000003AC0 840+ DC AL2(13)
002830 00 841+ DC X'0000000000003AC0100DFAFE7'
002832 00 842+ ALIGN WORD
002834 00 843+ DC AL2(0)
002836 C1C1 844+ DC C'AA'
002838 196E 845+ ALIGN WORD
00283A 0201 846+ DC AL2(PARMARA)
00283C 29EC 847 N00048 \$CALL TYPE=XTRNL,MAP=7A51,EP=A,FT=(F00074),GTO=(7A51,A)
00283E F7C1F5F1 848+ N00048 DC A(@CALL)
002840 C140 849+ DC A(F00074)
002842 0001 850+ DC CL4'7A51'
002844 0500 851+ DC CL2'A'
002846 2858 852+ DC AL2(XTRNL)
002848 2AAE 853 N00049 \$FIXT FT=(F00232)
00284A 0202 854+ N00049 DC A(@FIXT)
00284C C140 855+ DC A(F00232)
00284E 0001 856+ DC AL2(DUMMY)
002850 0101 857 ENTPT EQU \*
002852 2A40 858 \*\*\*\*\*
002854 0000 859 \*\*\*\*\*
002856 0000 860 \*\*
002858 0101 861 \*\*
00285A 2A40 862 \*\*
00285C 0000 863 \*\*\*\*\*
00285E 0000 864 \*\*\*\*\*
002860 0000 865 \*\*\*\*\*
002862 0000 866+ ENTPT EP=A,STEP=00001
002864 0000 867+ DC CL2'A'
002866 0000 868 ENTPT EP=B,STEP=00039
002868 0000 869+ DC CL2'B'
00286A 0000 870+ DC A(N00039)
00286C 0000 871+ DC AL2(DUMMY)
00286E 0000 872 \*\*\*\*\*
00286F 0000 873 \*\*\*\*\*
002870 0000 874 \*\*
002872 0000 875 \*\*
002874 0000 876 \*\*
002876 0000 877 \*\*\*\*\*
002878 0000 878 \*\*\*\*\*
00287A 0000 879 \*\*\*\*\*
00287C 0000 880 \*\*\*\*\*
00287E 0000 881 \*\*\*\*\*
002880 0000 882 \*\*\*\*\*
002882 0000 883 \*\*\*\*\*
002884 0000 884 \*\*\*\*\*
002886 0000 885 \*\*\*\*\*
002888 0000 886 \*\*\*\*\*
00288A 0000 887 \*\*\*\*\*
00288C 0000 888 \*\*\*\*\*
00288E 0000 889 \*\*\*\*\*
002890 0000 890 \*\*\*\*\*
002892 0000 891 \*\*\*\*\*
002894 0000 892 \*\*\*\*\*
002896 0000 893 \*\*\*\*\*
002898 0000 894 \*\*\*\*\*
00289A 0000 895 \*\*\*\*\*
00289C 0000 896 \*\*\*\*\*
00289E 0000 897 \*\*\*\*\*
0028A0 0000 898 \*\*\*\*\*
0028A2 0000 899 \*\*\*\*\*
0028A4 0000 900 \*\*\*\*\*
0028A6 0000 901 \*\*\*\*\*
0028A8 0000 902 \*\*\*\*\*
0028AA 0000 903 \*\*\*\*\*
0028AC 0000 904 \*\*\*\*\*
0028AE 0000 905 \*\*\*\*\*
0028B0 0000 906 \*\*\*\*\*
0028B2 0000 907 \*\*\*\*\*
0028B4 0000 908 \*\*\*\*\*
0028B6 0000 909 \*\*\*\*\*
0028B8 0000 910 \*\*\*\*\*
0028BA 0000 911 \*\*\*\*\*
0028BC 0000 912 \*\*\*\*\*
0028BE 0000 913 \*\*\*\*\*
0028C0 0000 914 \*\*\*\*\*
0028C2 0000 915 \*\*\*\*\*
0028C4 0000 916 \*\*\*\*\*
0028C6 0000 917 \*\*\*\*\*
0028C8 0000 918 \*\*\*\*\*
0028CA 0000 919 \*\*\*\*\*
0028CC 0000 920 \*\*\*\*\*
0028CE 0000 921 \*\*\*\*\*
0028D0 0000 922 \*\*\*\*\*
0028D2 0000 923 \*\*\*\*\*
0028D4 0000 924 \*\*\*\*\*
0028D6 0000 925 \*\*\*\*\*
0028D8 0000 926 \*\*\*\*\*
0028DA 0000 927 \*\*\*\*\*
0028DC 0000 928 \*\*\*\*\*
0028DE 0000 929 \*\*\*\*\*
0028E0 0000 930 \*\*\*\*\*
0028E2 0000 931 \*\*\*\*\*
0028E4 0000 932 \*\*\*\*\*
0028E6 0000 933 \*\*\*\*\*
0028E8 0000 934 \*\*\*\*\*
0028EA 0000 935 \*\*\*\*\*
0028EC 0000 936 \*\*\*\*\*
0028EE 0000 937 \*\*\*\*\*
0028F0 0000 938 \*\*\*\*\*
0028F2 0000 939 \*\*\*\*\*
0028F4 0000 940 \*\*\*\*\*
0028F6 0000 941 \*\*\*\*\*
0028F8 0000 942 \*\*\*\*\*
0028FA 0000 943 \*\*\*\*\*
0028FC 0000 944 \*\*\*\*\*
0028FE 0000 945 \*\*\*\*\*
002800 0000 946 \*\*\*\*\*
002802 0000 947 \*\*\*\*\*
002804 0000 948 \*\*\*\*\*
002806 0000 949 \*\*\*\*\*
002808 0000 950 \*\*\*\*\*
00280A 0000 951 \*\*\*\*\*
00280C 0000 952 \*\*\*\*\*
00280E 0000 953 \*\*\*\*\*
002810 0000 954 \*\*\*\*\*
002812 0000 955 \*\*\*\*\*
002814 0000 956 \*\*\*\*\*
002816 0000 957 \*\*\*\*\*
002818 0000 958 \*\*\*\*\*
00281A 0000 959 \*\*\*\*\*
00281C 0000 960 \*\*\*\*\*
00281E 0000 961 \*\*\*\*\*
00281F 0000 962 \*\*\*\*\*
002820 0000 963 \*\*\*\*\*
002822 0000 964 \*\*\*\*\*
002824 0000 965 \*\*\*\*\*
002826 0000 966 \*\*\*\*\*
002828 0000 967 \*\*\*\*\*
00282A 0000 968 \*\*\*\*\*
00282C 0000 969 \*\*\*\*\*
00282E 0000 970 \*\*\*\*\*
002830 0000 971 \*\*\*\*\*
002832 0000 972 \*\*\*\*\*
002834 0000 973 \*\*\*\*\*
002836 0000 974 \*\*\*\*\*
002838 0000 975 \*\*\*\*\*
00283A 0000 976 \*\*\*\*\*
00283C 0000 977 \*\*\*\*\*
00283E 0000 978 \*\*\*\*\*
002840 0000 979 \*\*\*\*\*
002842 0000 980 \*\*\*\*\*
002844 0000 981 \*\*\*\*\*
002846 0000 982 \*\*\*\*\*
002848 0000 983 \*\*\*\*\*
00284A 0000 984 \*\*\*\*\*
00284C 0000 985 \*\*\*\*\*
00284E 0000 986 \*\*\*\*\*
00284F 0000 987 \*\*\*\*\*
002850 0000 988 \*\*\*\*\*
002852 0000 989 \*\*\*\*\*
002854 0000 990 \*\*\*\*\*
002856 0000 991 \*\*\*\*\*
002858 0000 992 \*\*\*\*\*
00285A 0000 993 \*\*\*\*\*
00285C 0000 994 \*\*\*\*\*
00285E 0000 995 \*\*\*\*\*
00285F 0000 996 \*\*\*\*\*
002860 0000 997 \*\*\*\*\*
002862 0000 998 \*\*\*\*\*
002864 0000 999 \*\*\*\*\*
002866 0000 1000 \*\*\*\*\*

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
878 \*\*\*\*\*
879 F00097 EQU \*
880 DC AL2(0001)
881 DC A(0020)
882 DC CL0020'TEST DIAGNOSTIC BITS'
883 F00047 EQU \*
884 DC AL2(0001)
885 DC A(0036)
886 DC CL0036''NO'' IS NOT VALID, GO TO NEXT STEP. '
887 F00109 EQU \*
888 DC AL2(0001)
889 DC A(0022)
890 DC CL0022'SET ERROR HALT CODE A '
891 F00114 EQU \*
892 DC AL2(0001)
893 DC A(0010)
894 DC CL0010'BAD PARITY'
895 F00123 EQU \*
896 DC AL2(0001)
897 DC A(0022)
898 DC CL0022'SET ERROR HALT CODE W '
899 F00134 EQU \*
900 DC AL2(0001)
901 DC A(0022)
902 DC CL0022'SET ERROR HALT CODE V '
903 F00137 EQU \*
904 DC AL2(0001)
905 DC A(0030)
906 DC CL0030'DEAD END SHOULD NEVER GET HERE'
907 F00142 EQU \*
908 DC AL2(0002)
909 DC A(0016)
910 DC CL0016'SCAN TEST FAILED'
911 DC A(0026)
912 DC CL0026'EXCHANGE CARDS A2-D2,A2-C2'
913 F00148 EQU \*
914 DC AL2(0001)
915 DC A(0020)
916 DC CL0020'TEST DIAGNOSTIC BITS'
917 F00160 EQU \*
918 DC AL2(0001)
919 DC A(0022)
920 DC CL0022'SET ERROR HALT CODE A '
921 F00165 EQU \*
922 DC AL2(0001)
923 DC A(0010)
924 DC CL0010'BAD PARITY'
925 F00174 EQU \*
926 DC AL2(0001)
927 DC A(0022)
928 DC CL0022'SET ERROR HALT CODE W '
929 F00185 EQU \*
930 DC AL2(0001)
931 DC A(0022)
932 DC CL0022'SET ERROR HALT CODE V '
933 F00188 EQU \*
934 DC AL2(0001)
935 DC A(0030)
936 DC CL0030'DEAD END SHOULD NEVER GET HERE'
937 F00074 EQU \*
938 DC AL2(0002)
939 DC A(0046)
940 DC CL0046'POTENTIAL FAILURE EXISTS BUT FILE FUNCTIONING '
941 DC A(002)
942 DC CL0002'OK'
943 F00234 EQU \*
944 DC AL2(0001)
945 DC A(0026)
946 DC CL0026'WRITE TESTS RAN W/O ERROR.'
947 F00232 EQU \*
948 DC AL2(0001)
949 DC A(0026)
950 DC CL0026'WRITE TESTS RAN W/O ERROR.'
951 PDIT 00
952+OPTN1 DC X'0000' PROGRAM OPTION CONTROL WORD 1
953+OPTN2 DC X'0000' PROGRAM OPTION CONTROL WORD 2
954+OPTN3 DC X'0000' PROGRAM OPTION CONTROL WORD 3
955+BIT BIT
956+BIT BIT
957+B48 EQU 16 0 8
958+B49 EQU 17 1 4
959+B50 EQU 18 2 2
960+B51 EQU 19 3 1
961+B52 EQU 20 4 8
962+B53 EQU 21 5 4
963+B54 EQU 22 6 2
964+B55 EQU 23 7 1
965+B56 EQU 24 8 8
966+B57 EQU 25 9 4
967+B58 EQU 26 10 2
968+B59 EQU 27 11 1
969+B60 EQU 28 12 8
970+B61 EQU 29 13 4
971+B62 EQU 30 14 2
972+B63 EQU 31 15 1
973+CH EQU 30 14 2
974+CMP EQU 31 15 1
975+CH EQU 30 14 2
976+OPTN3 DC X'0000'
977+MI MI
978+MI MI
979+MI MI
980+MI MI
981+MI MI
982+MI MI
983+MI MI
984+MI MI
985+MI MI
986+MI MI
987+MI MI
988+MI MI
989+MI MI
990+MI MI
991+MI MI
992+MI MI
993+MI MI
994+MI MI
995+MI MI
996+MI MI
997+MI MI
998+MI MI
999+MI MI
1000+MI MI
98 CS STATUS IN PROGRESS CS
99 CS AVAILABLE CSA
100 CS STATUS INTERRUPT ERR CE
101 ISB BITS ON (-7) ISBON
12 TEST UNIT RESULTS VOID NG
13 OIO CC ERROR IOCC
14 NO INTERRUPT NOIN
15 INTERRUPT CC ERROR INCC
MYSTERY INTERRUPT HAPPENED
ERROR RECEIVED ON INTERRUPT
EXPECTED INTERRUPT CONTROL BIT
INTERRUPT RECEIVED CONTROL BIT
EXPECTED ERROR RESPONSE
HARD ERROR, 8 RETRIES

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
000026 994+\$LE EQU 38 6 2 INTERRUPT ON WRONG LEVEL ERROR
000027 995+\$NI EQU 39 7 1 NO INTERRUPT EXPECTED E
000028 996+\$CS EQU 40 8 8 CYCLE STATUS IN PROGRESS
000029 997+\$CSA EQU 41 9 4 CYCLE STEAL AVAILABLE
00002A 998+\$CE EQU 42 10 2 CYCLE STEAL STATUS INERRRUPT ERROR
00002B 999+\$SBON EQU 43 11 1 ISB BITS ON (1-7)
00002C 1000+\$NG EQU 44 12 8 TEST UNIT RESULTS NO GOOD
00002D 1001+\$IOCC EQU 45 13 4 I/O CC ERROR
00002E 1002+\$NOIN EQU 46 14 2 NO INTERRUPT
00002F 1003+\$INCC EQU 47 15 1 INTERRUPT CC ERROR
1004+\*\* COMMON BUFFER FOR PRINTING DATA
1005+\*\*
1006+\*\*
002A64 0000 1008+\$TUID DC A(\*-\*) TEST UNIT IDENTIFICATION
002A66 0000 1009+\$IOIN DC A(\*-\*) I/O AND INTR CONDITION CODES
002A68 0000 1010+\$ISB DC A(\*-\*) R7, INTR STATUS BYTE & DEV ADRS
002A6A 0000 1011+\$LSTIO DC A(\*-\*) ADRS OF LAST I/O + 4 BYTES
002A6C 0000 1012+\$DEV1 DC A(\*-\*) DEVICE DEPENDENT DATA
002A6E 0000 1013+\$DEV2 DC A(\*-\*) \*
002A70 0000 1014+\$DEV3 DC A(\*-\*) \*
002A72 0000 1015+\$DEV4 DC A(\*-\*) \*
002A6C 0000 1016+\$CTID EQU DEV1 CS STATUS ERROR ISB & INTR CC
002A74 0000 1017+\$DCBUF EQU \* READ ID BUFFER FOR IBIS & TERN
002A76 0000 1018+\$DCB1 DC A(\*-\*) DCB BUFFER FOR LAST DCB USED
002A78 0000 1019+\$DCB2 DC A(\*-\*) LAST DCB TABLE, CONTROL WORD
002A7A 0000 1020+\$DCB3 DC A(\*-\*) LAST DCB TABLE, DEV DEP WORD
002A7C 0000 1021+\$DCB4 DC A(\*-\*) LAST DCB TABLE, DEV DEP WORD
002A7E 0000 1022+\$DCB5 DC A(\*-\*) LAST DCB TABLE, DEV DEP WORD
002A80 0000 1023+\$DCB6 DC A(\*-\*) LAST DCB TABLE, CHAIN ADRS
002A82 0000 1024+\$DCB7 DC A(\*-\*) LAST DCB TABLE, BYTE COUNT
002A84 0000 1025+\$DCB8 DC A(\*-\*) LAST DCB TABLE, BUFFER ADDRESS
1026+\*\*
002A84 0000 1027+\$CSBUF EQU \* CYCLE STEAL DATA BUFFER
002A86 0000 1028+\$CSTL1 DC A(\*-\*) CS STATUS WD 0, RESIDUAL ADDRESS
002A88 0000 1029+\$CSTL2 DC A(\*-\*) CS STATUS WD 1, RESIDUAL COUNT
002A8A 0000 1030+\$CSTL3 DC A(\*-\*) CS STATUS WD 2, RETRY CNT WD 1
002A8C 0000 1031+\$CSTL4 DC A(\*-\*) CS STATUS WD 3, RETRY CNT WD 2
002A8E 0000 1032+\$CSTL5 DC A(\*-\*) CS STATUS WD 4, ERROR STATUS WD 1
002A90 0000 1033+\$CSTL6 DC A(\*-\*) CS STATUS WD 5, ERROR STATUS WD 2
002A92 0000 1034+\$CSTL7 DC A(\*-\*) CS STATUS WD 6, LAST DCB ADDRESS
002A94 0000 1035+\$CSTL8 DC A(\*-\*) CS STATUS WD 7, PREVIOUS HD/CYL
002A96 0000 1036+\$CSTL9 DC A(\*-\*) CS STATUS WD 8, CURRENT HD/CYL
002A98 0000 1037+\$CST10 DC A(\*-\*) CS STATUS WD 9, FLAG/SECTOR
002A9A 0000 1038+\$CST11 DC A(\*-\*) CS STATUS WD 10, HEAD/CYLINDER
002A9C 0000 1039+\$CST12 DC A(\*-\*) CS STATUS WD 11, DIAG BYTES 1, 2
002A9E 0000 1040+\$CST13 DC A(\*-\*) CS STATUS WD 12, AND 3 + WRAP BYTE
1041+\*\*
002A9E 0000 1042+\$SUBN DC A(\*-\*) LAST SUBROUTINE ADDRESS USED
002AA0 00000000 1043+\$DATA DC 2A(\*-\*) OPTIONAL DATA
002AA4 0021 1044+\$INTL DC X'0021' INTERRUPT LEVEL REQUESTED
002AA6 0000 1045+\$TURTN DC A(\*-\*) TEST UNIT RETURN ADRS TO MDI
002AA8 00 1046+\$DVID DC X'00' DEVICE ID
002AAA 19D0 1047+\$VICAL DC A(DEVADD) ADRS OF DEVICE ADDRESS
002AAC 0000 1048+\*\* A(\*-\*) IBIS CYLINDER ADDRESS
1049+\*\*
1050+\*\* THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
1051+\*\* FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
1052+\*\* STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
1053+\*\*
002AAE 4020 2A64 7A02 1054+\$T7A02 MVWI X'7A02', \$TUID SET UP TEST UNIT ID
002AB4 5700 1055+ BXS (R7) RETURN TO MDI SUPVR
1057 COPY COMEQU
1058 \*\*\*\*\*
1059 \*
1060 \* EQUATED NAMES FOR SUPPORTED SVC'S
1061 \*
1062 \*\*\*\*\*
000000 1063 OUT EQU 0 OUT SVC
000001 1064 OUTIN EQU 1 OUTIN SVC
000002 1065 IDLE EQU 2 IDLE SVC
000003 1066 IDLE5 EQU 3 IDLE SVC - INDEPENDENT OF CPU TYPE
000004 1067 CHNGE EQU 4 CHANGE LEVEL SVC
000005 1068 PGMCK EQU 5 ALLOW RETURN ON PROGRAM CHECK SVC
000006 1069 EXIT EQU 6 EXIT SVC
000007 1070 TERM EQU 7 TERMINATE SVC
000008 1071 RESET EQU 8 RESET DEVICE SVC
000009 1072 RID EQU 9 READ ID SVC
00000A 1073 START EQU 10 START CYCLE STEAL SVC
00000B 1074 STCSS EQU 11 START CYCLE STEAL STATUS SVC
00000C 1075 PREP EQU 12 PREPARE DEVICE SVC
00000D 1076 READ0 EQU 13 READ WITH FUNCTION BIT 3 OFF SVC
00000E 1077 READ1 EQU 14 READ WITH FUNCTION BIT 3 ON SVC
00000F 1078 RSTAT EQU 15 READ STATUS SVC
000010 1079 WRIT0 EQU 16 WRITE WITH FUNCTION BIT 3 OFF SVC
000011 1080 WRIT1 EQU 17 WRITE WITH FUNCTION BIT 3 ON SVC
000012 1081 CTRL EQU 18 CONTROL SVC
000013 1082 RICB EQU 19 RELEASE INTERRUPT CONTROL BLOCK SVC
000014 1083 CICB EQU 20 CONNECT INTERRUPT CONTROL BLOCK SVC
000015 1084 HIO EQU 21 HALT ALL I/O
000016 1085 REQSD EQU 22 REQUEST USE OF DCP DISK SVC
000017 1086 RELSD EQU 23 RELEASE USE OF DCP DISK SVC
000018 1087 HALT EQU 24 HALT SVC
000019 1088 EBCDIC EQU 25 EBCDIC TO HEX SVC (STRING)
00001A 1089 HTOB EQU 26 HEX TO EBCDIC SVC (STRING)
00001B 1090 ATOH EQU 27 ASCII TO HEX SVC (STRING)
00001C 1091 HTOA EQU 28 HEX TO ASCII SVC (STRING)
00001D 1092 ETOA EQU 29 EBCDIC TO ASCII SVC (STRING)
00001E 1093 ATOE EQU 30 ASCII TO EBCDIC SVC (STRING)
00001F 1094 READI EQU 31 READ DATA SETS FOR MDI/UTIL
000020 1095 WRITI EQU 32 WRITE DATA SETS FOR UTIL
1097 \*\*\*\*\*
1098 \*
1099 \* EQUATES USED BY TU'S AS CONSTANTS
1100 \*
1101 \*\*\*\*\*
00004E 1102 PLUS EQU C'++' PLUS CHAR
000050 1103 MINUS EQU C'-' MINUS CHAR
000000 1105 ZERO EQU 0
000001 1106 ONE EQU 1
000002 1107 TWO EQU 2
000003 1108 THREE EQU 3
000004 1109 FOUR EQU 4
000005 1110 FIVE EQU 5
000006 1111 SIX EQU 6

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
000007 1112 SEVEN EQU 7
000008 1113 EIGHT EQU 8
000009 1114 NINE EQU 9
00000A 1115 TEN EQU 10
00000B 1116 ELEVN EQU 11
00000C 1117 TWELV EQU 12
00000D 1118 THVTN EQU 13
00000E 1119 FVTN EQU 14
000010 1120 SIXTN EQU 15
000020 1121 THRY2 EQU 32
000040 1122 SIXT4 EQU 64
000080 1123 ONE28 EQU 128
000100 1124 TWO56 EQU 256
000400 1125 ONEK EQU 1024
000800 1126 TWOK EQU 2048
000C00 1127 THREEK EQU 3072
001000 1128 FOURK EQU 4096
FFFFF0 1130 M1 EQU -1
FFFFF8 1131 M2 EQU -2
FFFFFD 1132 M3 EQU -3
FFFFFC 1133 M4 EQU -4
1135 \*\*\*\*\*
1136 \*
1137 \* THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE
1138 \* BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES.
1139 \*
1140 \*\*\*\*\*
000000 1141 BS0 EQU 0
000001 1142 BS1 EQU 1
000002 1143 BS2 EQU 2
000003 1144 BS3 EQU 3
000004 1145 BS4 EQU 4
000005 1146 BS5 EQU 5
000006 1147 BS6 EQU 6
000007 1148 BS7 EQU 7
000008 1149 BS8 EQU 8
000009 1150 BS9 EQU 9
00000A 1151 BS10 EQU 10
00000B 1152 BS11 EQU 11
00000C 1153 BS12 EQU 12
00000D 1154 BS13 EQU 13
00000E 1155 BS14 EQU 14
00000F 1156 BS15 EQU 15
1158 COPY T7A00DCB 07FEB78
1159 \*\* (T7A00DCB)
1160 \*
1161 \*\*\*\*\*4/28/77\*\*\*\*\*
1162 \*
1163 \* DCB TABLES AND DC'S
1164 \*
1165 \*\*\*\*\*
1166 \*
1167 \*\*\*\*\* DIAGNOSTIC DCB \*\*\*\*\*
1168 \*
002AB6 2008 1169 DGDCB DC X'2008' DIAGNOSTIC DCB
002AB8 0000 1170 DC A(\*-\*) FLAG / PHYSICAL SECTOR#
002ABA 0000 1171 DC A(\*-\*) HEAD / CYLINDER#S
002ABC 0000 1172 DC X'0000' NOT USED
002ABE 2B90 1173 DC A(RSBA) RSB ADDRESS
002AC0 0000 1174 DC A(\*-\*) CHAINING ADDRESS
002AC2 0100 1175 DC X'0100' BYTE COUNT
002AC4 0000 1176 DC A(\*-\*) DATA ADDRESS
1177 \*
1178 \*\*\*\*\* RECALIBRATE DCB \*\*\*\*\*
1179 \*
002AC6 0001 1180 CLDCB DC X'0001' RECALIBRATE DCB
002AC8 0000000000000000 1181 DC 7A(\*-\*)
1182 \*
1183 \*\*\*\*\* WRITE SECTOR ID \*\*\*\*\*
1184 \*
002AD6 002D 1185 WSDCB DC X'002D' WRITE SECTOR ID CNTL WORD
002AD8 0000 1186 DC A(\*-\*) FLAG / PHYSICAL SECTOR#
002ADA 0000 1187 DC A(\*-\*) HEAD / CYLINDER#S
002ADC 0000 1188 DC X'0000' NOT USED
002ADE 2B90 1189 DC A(RSBA) RSB ADDRESS
002AE0 0000 1190 DC A(\*-\*) CHAIN ADDRESS
002AE2 0004 1191 DC X'0004' BYTE COUNT
002AE4 2B84 1192 DC A(WRSID) ADDR OF SECTOR ID DATA
1193 \*
1194 \*\*\*\*\* READ SECTOR ID DCB \*\*\*\*\*
1195 \*
002AE6 201C 1196 RSDCB DC X'201C' READ SECTOR ID CNTL WORD
002AE8 0000 1197 DC A(\*-\*) FLAG / PHYSICAL SECTOR#
002AEA 0000 1198 DC X'0000' HEAD / CYLINDER#S
002AEC 0000 1199 DC X'0000' NOT USED
002AEE 2B90 1200 DC A(RSBA) RSB ADDRESS
002AF0 0000 1201 DC A(\*-\*) CHAIN ADDRESS
002AF2 0004 1202 DC X'0004' BYTE COUNT FOR READ SECTOR ID
002AF4 2A6C 1203 DC A(SCTID) SECTOR ID DATA ADDRESS
1204 \*
1205 \*\*\*\*\* SEEK DCB \*\*\*\*\*
1206 \*
002AF6 0000 1207 SKDCB DC X'0000' SEEK DCB CONTROL WORD
002AF8 0000 1208 DC X'0000' NOT USED
002AFA 0000 1209 DC A(\*-\*) HEAD / CYLINDER#S
002AFC 0000 1210 DC X'0000' NOT USED
002AFE 2B90 1211 DC A(RSBA) RSB ADDRESS
002B00 0000 1212 DC A(\*-\*) CHAIN ADDRESS
002B02 0000 1213 DC X'0000' NOT USED
002B04 0000 1214 DC X'0000' NOT USED
1215 \*
1216 \*\*\*\*\* CYCLE STEAL STATUS DCB \*\*\*\*\*
1217 \*
002B06 2000 1218 CSDCB DC X'2000' CONTROL WORD
002B08 0000 1219 DC F'0' NOT USED
002B0A 0000 1220 DC F'0' NOT USED
002B0C 0000 1221 DC F'0' NOT USED
002B0E 0000 1222 DC F'0' NOT USED
002B10 0000 1223 DC F'0' NOT USED
002B12 001A 1224 DC X'001A' 13 WORDS OF STATUS
002B14 2A84 1225 DC A(CSBUF) ADDRESS OF CYCLE STEAL STATUS DATA
1226 \*
1227 \*\*\*\*\* WRITE DCB \*\*\*\*\*
1228 \*

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002B16	0028	1229	WRDCB DC X'0028'	WRITE DATA DCB CNTL WORD
002B18	0000	1230	DC A(*-*)	FLAG / RECORD#
002B1A	0000	1231	DC A(*-*)	HEAD / CYLINDER#'S
002B1C	0000	1232	DC A(*-*)	SCAN / REPEAT COUNT
002B1E	2B90	1233	DC A(RSPA)	RSB ADDRESS
002B20	0000	1234	DC A(*-*)	CHAIN ADDRESS
002B22	0100	1235	DC X'0100'	BYTE COUNT
002B24	0000	1236	DC A(*-*)	WRITE DATA ADDRESS
*****				
002B26	0019	1238	VRDCB DC X'0019'	CONTROL WORD
002B28	0000	1239	DC A(*-*)	FLAG / RECORD#
002B2A	0000	1240	DC A(*-*)	HEAD / CYLINDER#'S
002B2C	0000	1241	DC A(*-*)	SCAN / REPEAT COUNT
002B2E	2B90	1242	DC A(RSPA)	RSB ADDRESS
002B30	0000	1243	DC A(*-*)	CHAIN ADDRESS
002B32	0000	1244	DC A(*-*)	BYTE COUNT
002B34	0000	1245	DC F'0'	NOT USED
*****				
002B36	2018	1248	RDDCB DC X'2018'	READ DCB CONTROL WORD
002B38	0000	1249	DC A(*-*)	FLAG / RECORD#
002B3A	0000	1250	DC A(*-*)	HEAD / CYLINDER#'S
002B3C	0000	1251	DC A(*-*)	SCAN / REPEAT COUNT
002B3E	2B90	1252	DC A(RSPA)	RSB ADDRESS
002B40	0000	1253	DC A(*-*)	CHAIN ADDRESS
002B42	0100	1254	DC X'0100'	BYTE COUNT
002B44	0000	1255	DC A(*-*)	READ DATA ADDRESS
*****				
002B46	002F	1259	WKDCB DC X'002F'	CONTROL WORD
002B48	0000	1260	DC A(*-*)	FLAG / PHYSICAL SECTOR#
002B4A	0000	1261	DC A(*-*)	HEAD / CYLINDER#'S
002B4C	0000	1262	DC F'0'	NOT USED
002B4E	2B90	1263	DC A(RSPA)	RSB ADDRESS
002B50	0000	1264	DC A(*-*)	CHAIN ADDRESS
002B52	0004	1265	DC X'0004'	BYTE COUNT
002B54	2B84	1266	DC A(WRSID)	ADDR OF SECTOR ID DATA
*****				
002B56	201D	1270	RKDCB DC X'201D'	CONTROL WORD
002B58	0000	1271	DC A(*-*)	FLAG / PHYSICAL SECTOR#
002B5A	0000	1272	DC A(*-*)	HEAD / CYLINDER#'S
002B5C	0000	1273	DC F'0'	NOT USED
002B5E	2B90	1274	DC A(RSPA)	RSB ADDRESS
002B60	0000	1275	DC A(*-*)	CHAIN ADDRESS
002B62	0004	1276	DC X'0004'	BYTE COUNT
002B64	2A6C	1277	DC A(SCTID)	SECTOR ID DATA ADDRESS
*****				
002B66	201C	1281	RMDCB DC X'201C'	CONTROL WORD
002B68	0000	1282	DC A(*-*)	FLAG / PHYSICAL SECTOR#
002B6A	0000	1283	DC A(*-*)	HEAD / CYLINDER#'S
002B6C	0000	1284	DC F'0'	NOT USED
002B6E	2B90	1285	DC A(RSPA)	RSB ADDRESS
002B70	0000	1286	DC A(*-*)	CHAIN ADDRESS
002B72	0084	1287	DC X'0084'	BYTE COUNT
002B74	2BA0	1288	DC A(ID00)	DATA AREA ADDRESS
*****				
002B76	0000	1292	ZERO DC X'0000'	CONSTANT ZERO
002B78	0001	1293	ONE DC X'0001'	CONSTANT ONE
002B7A	0000	1294	RAY DC A(*-*)	WRITE PARAMETER POINTER
002B7C	EB6D	1295	WDATA DC X'EB6D'	WRITE DATA
002B7E	6BDB	1296	DC X'6BDB'	*
002B80	0000	1297	LGSEC DC X'0000'	LOGICAL SECTOR #
002B82	0000	1298	PHYS DC X'0000'	CONVERTED PHYSICAL SEC #
002B84	0000	1299	WRSID DC X'0000'	FLAG, SECTOR (WRT SECTOR ID DATA)
002B86	0000	1300	DC X'0000'	HEAD, CYLINDER
002B88	FF34	1301	WSIDT DC X'FF34'	WRITE SECTOR ID TEST DATA
002B8A	5678	1302	DC X'5678'	*
002B8C	0000	1303	SCTST DC X'0000'	READ SECTOR ID TEST DATA BUFFER
002B8E	0000	1304	DC X'0000'	*
002B90	0000000000000000	1305	RSBA DC 6A(*-*)	RESIDUAL STATUS BLOCK
002B92	0000	1306	DC X'0000'	COUNTER
002B94	0000	1307	CTR02 DC X'0000'	COUNTER
002B96	0000	1308	CTR03 DC X'0000'	COUNTER
002B98	0000	1309	DC X'0000'	ID ADDRESS TO BE SET BY USER
002BA0	10 10	1310	ID00 DC X'1010'	WRITE DIAG WORD 1 DATA PATTERNS
002BA2	5555	1311	PDATA DC X'5555'	*
002BA4	AAAA	1312	DC X'AAAA'	*
002BA6	AAAA	1313	DC X'AAAA'	*
002BA8	FFFF	1314	DC X'FFFF'	*
*****4/06/77*****				
1316	SUBROUTINE			
1317	PURPOSE			
1320	COMPARE READ SECTOR ID DATA TO WRITE SECTOR ID DATA			
1323	CALLING SEQUENCE			
1324	BAL CMPRW,R6 (NORMAL)			
1325	RETURN			
1328	BXS (R6,2) - NORMAL			
1333	*****			
002BAA	4724 0004	1335	CMPRW MVWI 4,R7	COMPARE BYTE COUNT
002BAE	4324 2A6C	1336	MVA SCTID,R3	ADDR OF RD SEC ID DATA
002BB2	4524 2B84	1337	MVA WRSID,R5	ADDR OF WR SEC ID DATA
002BB6	2BA6	1338	CFNEN (R3),(R5)	COMPARE ID DATA
002BB8	68C0 0002	1339	BE (R6,2)	BCH IF WRITE ID DATA OK
002BBC	68D2 0000	1340	B (R6)*	COMPARE ERROR
1342	*****			
1343	*			

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
1344	*	1344	EXECUTE INPUT & OUTPUT COMMANDS	
1345	*	1345	TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.	
1346	*	1346	EACH OF THESE ENTRIES SET R7 WITH THE ADDR OF ITS PARAMETER	
1347	*	1347	LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE	
1348	*	1348	SUPVR CALL.	
1349	*	1349	*****	
1350	*	1350	THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:	
1351	*	1351	1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP	
1352	*	1352	2. ERROR INTERRUPTS RECEIVED FROM SUPVR	
1353	*	1353	*****	
1354	*	1354	THIS ROUTINE HAS THE FOLLOWING ENTRIES:	
1355	*	1355	*****	
1356	*	1356	*****	
1357	1	1357	BAL SRKEW,R6	READ SECTOR ID SKEWED
1358	*	1358	*****	
1359	2	1359	BAL SWKEW,R6	WRITE SECTOR ID SKEWED
1360	*	1360	*****	
1361	3	1361	BAL SWSEC,R6	WRITE SECTOR ID
1362	*	1362	*****	
1363	4	1363	BAL \$DIAG,R6	DIAGNOSTIC
1364	*	1364	*****	
1365	5	1365	BAL XI0CS,R6	CYCLE STEAL STATUS
1366	*	1366	*****	
1367	6	1367	BAL \$SEEK,R6	SEEK
1368	*	1368	*****	
1369	7	1369	BAL \$RECL,R6	RECALIBRATE
1370	*	1370	*****	
1371	8	1371	BAL \$RDID,R6	READ SECTOR ID
1372	*	1372	*****	
1373	9	1373	BAL \$RD,R6	READ
1374	*	1374	*****	
1375	10	1375	BAL \$RDVY,R6	READ VERIFY
1376	*	1376	*****	
1377	11	1377	BAL \$WRT,R6	WRITE
1378	*	1378	*****	
1379	12	1379	BAL \$RDIM,R6	READ MULTI SECTOR IDS
1380	*	1380	*****	
1381	*****			
1382	*	1382	*****	
002BC0	4020 2DD8 2AF6	1383	\$SEEK MVA SKDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002BC6	507F	1384	J XIO	
002BC8	4020 2DD8 2AC6	1385	\$RECL MVA CLDCB,IODCB	SET UP BLOCK FOR SVC CALL
002BCE	507B	1386	J XIO	
002BD0	4020 2DD8 2AE6	1387	\$RDID MVA RSDCB,IODCB	SET UP BLOCK FOR SVC CALL
002BD6	0BBB	1388	MVBI X'BB',R3	SET BUFFER TO B'S
002BD8	4524 2A6C	1389	MVA SCTID,R5	SETUP READ SECTOR ID BUFFER ADRS
002BDC	4724 0004	1390	MVWI 4,R7	SETUP BUFFER LENGTH
002BE0	2BAC	1391	FFN R3,(R5)	INIT READ SECTOR ID BUFFER
002BE2	4020 2AF4 2A6C	1392	MVA SCTID,RSDCB+14	DATA ADDR
002BE8	506E	1393	J XIO	
002BEA	4020 2DD8 2B66	1394	\$RDIM MVA RMDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002BF0	4724 0084	1395	MVWI 132,R7	SET BUFFER LENGTH
002BF4	4524 2BA0	1396	MVA ID00,R5	SET BUFFER ADDRESS
002BF8	0BBB	1397	MVBI X'BB',R3	SET CLEAR CHARACTERS
002BFC	2BAC	1400	FFN R3,(R5)	CLEAR THE BUFFER
002BFA	5064	1401	J XIO	
002BFE	0BFF	1402	\$RD MVBI X'FF',R3	SETRD BUFFER TO ALL F'S
002C00	6D08 2B44	1403	MVW RDDCB+14,R5	SET UP READ BUFFER ADRS
002C04	6F08 2B42	1404	MVW RDDCB+12,R7	SET UP BUFFER LENGTH
002C08	2BAC	1405	FFN R3,(R5)	CLEAR READ BUFFER
002C0A	4020 2DD8 2B36	1406	\$RD\$ MVA RDDCB,IODCB	SET UP BLOCK FOR SVC CALL
002C10	505A	1407	J XIO	
002C12	4020 2DD8 2B26	1408	\$RDVY MVA VRDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C18	5056	1409	J XIO	
002C1A	4020 2DD8 2B16	1410	\$WRT MVA WRDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C20	5052	1411	J XIO	
002C22	4020 2DD8 2B56	1412	\$RKEW MVA RKDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C28	0BBB	1413	MVBI X'BB',R3	SET BUFFER TO B'S
002C2A	4524 2A6C	1414	MVA SCTID,R5	SETUP READ SECTOR ID BUFFER ADRS
002C2E	4724 0004	1415	MVWI 4,R7	SETUP BUFFER LENGTH
002C32	2BAC	1416	FFN R3,(R5)	INIT READ SECTOR ID BUFFER
002C34	4020 2B64 2A6C	1417	MVA SCTID,RKDCB+14	DATA ADDR
002C3A	5045	1418	J XIO	
002C3C	4020 2DD8 2B46	1419	\$WKEW MVA WKDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C42	4020 2B54 2B84	1420	MVA WRSID,WKDCB+14	DATA ADDR
002C48	503E	1421	J XIO	
002C4A	4020 2DD8 2AD6	1422	\$WSEC MVA WSDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C50	4020 2AE4 2B84	1423	MVA WRSID,WSDCB+14	DATA ADDR
002C56	5037	1424	J XIO	
002C58	4020 2DD8 2AB6	1425	\$DIAG MVA DGDCB,IODCB	SET UP CONTROL BLOCK FOR SVC CALL
002C5E	5033	1426	J XIO	
002C60	6E0D 2A6A	1427	\$WRTO MVW R6,LISTIO	SAVE IAR FOR RETRY IF REQUESTED
002C64	0BFF	1428	MVBI 255,R3	CLEAR CYCLE STATUS BUFFER
002C66	4524 2A84	1429	MVA CSBUF,R5	* TO ALL ONES *
002C6A	0F16	1430	MVBI 22,R7	*
002C6C	2BAC	1431	FFN R3,(R5)	*
002C6E	4524 2A74	1432	MVA DCBUF,R5	CLEAR DCB BUFFER TO ALL ONES
002C72	0F10	1433	MVBI 16,R7	*
002C74	2BAC	1434	FFN R3,(R5)	*
002C76	4020 2A66 0708	1435	MVWI X'0708',SIOIN	OVERLAY OLD CONDITION CODES
002C7C	CB25 2A68	1436	MVWZ \$ISB,R3	ZERO OUT OLD ISB VALUE
002C80	4C13	1437	TBTR (R4,EN)	CLEAR INTERRUPT RECEIVED CNTL BIT
002C82	4CA1	1438	TBTR (R4,ER)	RESET ANY ERROR BEFORE I/O COMMAND
002C84	4C62	1439	TBTS (R4,XI)	SET EXPECTED INTR CTRL BIT
002C86	4724 2DD4	1440	MVA IOBLK,R7	SET UP CONTROL BLK FOR SUPR
002C8A	C020 2DD8	1441	MVB IOMOD+1,R0	GET IDCB FUNC/MODIFIER
002C8E	402D 2DDA 00F0	1442	RBWTI X'00F0',IOMOD	REMOVE FUNCTION FROM 'IOMOD'
002C94	3022	1443	SRL 4,R0	RIGHT JUSTIFY FUNCTION BITS IN R0
002C96	F005	1444	CBI 5,R0	IDCB FUNCTION = 5?
002C98	1003	1445	JE \$WRT1	YES - ISSUE 'SVC WRIT1'
002C9A	6010	1446	SVC WRIT0	ISSUE WRITE DPC '4X' OP
002C9C	6802	1447	B XIOB-4	GO WAIT FOR THE INTERRUPT
002CA0	6011	1448	\$WRT1 SVC WRIT1	ISSUE WRITE DPC '5X' OP

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002CA2 6802 2D20 1458 B XI08-4 GO WAIT FOR THE INTERRUPT
1459 *
002CA6 4020 2DD8 2B16 1460 $DGR MVA WRDCB,IODCB SET UP CONTROL BLK FOR SVC CALL
002CAC 6802 2CCC 1461 B XIODG ISSUE START CS DIAG CMD
1462 *
002CB0 4020 2DD8 2B36 1463 $DGRD MVA RDDCB,IODCB SET UP CONTROL BLK FOR SVC CALL
002CB6 6F08 2B42 1464 MVM RDDCB+12,R7 GET NO. OF BYTES TO CLEAR
002CBA 6D08 2B44 1465 MVM RDDCB+14,R5 ADDR OF READ BUFFER
002CBE 0BFF 1466 MVEI X'FF',R3 CLEAR TO F'S
002CC0 2BAC 1467 BFN R3,(R5)
002CC2 6802 2CCC 1468 B *
1469 COPY T7AXEQ ISSUE START CS DIAG CMD
1470 PRINT OFF 09MAR78
1471 T7AXEQ
2035 *****29JUL76**
2037**
2038** SUB-ROUTINE
2039**
2040** EXECUTE INPUT AND OUTPUT COMMANDS
2041**
2042** PURPOSE
2043**
2044** TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
2045** THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
2046**
2047** 1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
2048** THE I/O COMMAND.
2049** 2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
2050** ISSUED BY THIS SUBROUTINE.
2051** 3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
2052** START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
2053** 4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
2054** SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
2055** MYSTERY INTERRUPT (MI) CONTROL BIT IS SET.
2056** 5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
2057** EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC START'.
2058** 6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
2059** STARTS TO DETERMINE A LOST INTERRUPT.
2060** 7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
2061** WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
2062** 8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
2063** 9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
2064** 10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
2065** 11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
2066** 12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
2067** ISSUED BY THIS SUBROUTINE.
2068** 13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
2069** CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
2070** COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
2071**
2072** CALLING SEQUENCE
2073**
2074** THIS ROUTINE HAS THE FOLLOWING ENTRIES:
2075**
2076** --> BAL XI0 OR XEQ ANY CYCLE STEAL COMMAND, MOD=0
2077** --> BAL XI01 MOD PARM PRELOADED IN 'IOMOD'
2078** --> BAL XI0CS,R6 OR XEQ START CYCLE STEAL STATUS, MOD=F
2079** --> BAL XI0CS-4,R6 AUTO CS STATUS (FOLLOWING OTHER XI0
AND DOES NOT POST INTERRUPT STATUS)
2080**
2081**
2082** RETURN CONTROL
2083**
2084** BXS (R6,2) RETURN TO USER NO ERROR
2085** OR B (R6)* RETURN AND RETRY ON ERROR
2086** *****
002CC6 CB25 2DDA 2088+XIO MVWZ IOMOD,R3 SET MOP OF 0 FOR CYCLE STEAL OP
002CCA 500E J XIO1 CS I/O'S ARE NOT RETRIED
2089**
002CCC 4020 2DDA 000D 2090+XIODG MVWI X'000D',IOMOD SET MODIFIER FOR DIAGNOSTIC OPS
002CD2 500A J XIO1 GO TO CS OPS
2093**
002CD4 4CAA 2094+ TBTR (R4,CE) RESET CS STATUS INTER ERROR INDICAT.
002CD6 4C68 2095+ TBTS (R4,CS) SET 'CYCLE STEAL STATUS' IN PROGRESS
002CD8 4020 2DD8 2B06 2096+XIOCS MVA CSDBC,IODCB SET UP CONTROL BLOCK FOR SVC CALL
002CE0 4020 2DDA 000F 2097+ MVWI X'000F',IOMOD SET CYCLE STEAL MODIFIER
002CE4 4C28 2098+ TBTR (R4,CS),IOMOD IS CS IN PROGRESS, ERROR CONDITION
002CE6 1213 2099+ JON XIO2 * YES, BYPASS SAVING I/O ADRS
002CE8 6E0D 2A6A 2100+XIO1 MVM R6,LSTIO SAVE IAR FOR RETRY IF REQUESTED
002CEC 4324 2A74 2101+ MVA DCBUF,R3 SET UP TO ADRS TO MOVE DCB TABLE
002CF0 6D08 2DD8 2102+ MVM IODCB,R5 * AND THE FROM ADRS ALONG WITH
002CF4 0F1A 2103+ MVEI 26,R7 * THE NUMBER OF MOVES
002CF6 2D64 2104+ MVEI (R5),(R3) MOVE 1 STATUS WORD AND ADJUST
002CF8 0BFF 2105+ MVEI 255,R3 CLEAR CYCLE STATUS BUFFER
002CFA 4524 2A84 2106+ MVA CSBUF,R5 * TO ALL ONES *
002CFE 0F1A 2107+ MVEI 26,R7 *
002D00 2BAC 2108+ FPN R3,(R5) *
002D02 4020 2A66 0708 2109+ MVWI X'0708',SIOIN OVERLAY OLD CONDITION CODES
002D08 CB25 2A68 2110+ MVWZ '$ISB,R3 ZERO OUT OLD ISB VALUE
2111**
002D0C 4CA1 2112+ TBTR (R4,ER) RESET ANY ERROR BEFORE I/O COMMAND
002D0E 4CA3 2113+XIO2 TBTR (R4,IN) CLEAR INTERRUPT RECEIVED CNTL BIT
002D10 4724 2DD4 2114+ MVA IOBLK,R7 SET UP CONTROL BLOCK FOR SUPVR
002D14 4CA6 2115+ TBTR (R4,IE) SET LEVEL ERROR INDICATOR
002D16 4C62 2116+ TBTS (R4,IT) SET EXPECTED INTR CONTROL BIT
002D18 600A 2117+ SVC START CALL SUPVR FOR I/O COMMAND
2118**
002D1A 4CA7 2119+ TBTR (R4,NI) IS AN INTR EXPECTED
002D1C 6AC0 0002 2120+ BN (R6,2) * NO, RETURN TO USER
2121**
2122** THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
2123**
002D20 4524 0000 2124+ MVWI 0,R5 SET UP WORK REG FOR 'LOST INTR'
002D24 4CA3 2125+XIO8 TBTR (R4,IN) HAS INTERRUPT BEEN RECEIVED
002D26 1239 2126+ JON XIOCK * YES, CHECK IF ALL WAS SATISFACTORY
002D28 6002 2127+ SVC IDLE ALLOW ANOTHER PROGRAM A CHANCE TO RUN
SUPVR WILL RETURN HERE
2128**
002D2A 6002 2129+ SVC IDLE ALLOW ANOTHER PROGRAM A CHANCE TO RUN
SUPVR WILL RETURN HERE
2130**
002D2C 7DA1 0001 2131+ AWI 1,R5 ADVANCE TIME OUT COUNT
002D30 18F9 2132+ JNZ XI08 BCH IF TIME OUT NOT REACHED
002D32 4C61 2133+ TBTS (R4,ER) SET ON ERROR CONTROL BIT
002D34 68D2 0000 2134+ B (R6)* ERR 'NO INTERRUPT'
2135** *****03FEB76**
2137**

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
2138** SUBROUTINE
2139**
2140** I/O EXECUTE ERROR HANDLING ROUTINE
2141**
2142** PURPOSE
2143**
2144** THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
2145** PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
2146** SUPERVISOR AND IT WAS NOT ACCEPTED.
2147**
2148** CALLING SEQUENCE
2149**
2150** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
2151**
2152** RETURN CONTROL
2153**
2154** B (R6)* RETURN TO USERS ERROR HANDLER
2155**
2156** *****
2157** CC 0= DEVICE NOT ATTACHED
2158** FOR 1= DEVICE BUSY
2159** I/O 2= DEVICE BUSY AFTER RESET
2160** 3= COMMAND REJECT
2161** 4= INTERVENTION REQUIRED
2162** 5= INTERFACE DATA CHECK
2163** 6= CONTROLLER BUSY
2164** 7= I/O COMMAND EXCEPTED
2165**
002D38 706E 2167+XIOER CPLSR R3 COPY STATUS ANY LEVEL INTO R3
002D3A 336A 2168+ SRL 13,R3 POSITION CC CODE TO BITS 13-15
002D3C C328 2A66 2169+ MVB R3,SIOIN * PUT IN LOG OUT AREA
002D40 68D2 0000 2170+ B (R6)* RETURN TO USER ERROR HANDLER
2171** *****14APR76**
2172**
2173**
2174** SUB-ROUTINE
2175**
2176** ERROR INTERRUPT RUNS ON INTERRUPT LEVEL 'SINTL'
2177**
2178** PURPOSE
2179**
2180** THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR
2181** OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE
2182** EXPECTED CODE.
2183**
2184** CALLING SEQUENCE
2185**
2186** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT
2187**
2188** RETURN CONTROL
2189**
2190** SVC EXIT RETURN TO USER VIA SUPVR
2191**
2192** *****
2193**
2194** CC 0= CONTROLLER END ISB 0= ADD STATUS
2195** FOR 1= PROGRAM CONTROL INTERRUPT BITS 1= COMD REJECT
2196** INTR 2= EXCEPTION INTERRUPT FOR 2= INCOR LENGTH
2197** 3= DEVICE END INTERRUPT INTR 3= DCB SPEC CK
2198** 4= ATTENTION INTERRUPT 4= STG DATA CK
2199** 5= ATTENTION / PROGRAM CNTL INTR 5= INV STG ADRS
2200** 6= ATTENTION / EXCEPTION INTR 6= PROTRCT CK
2201** 7= ATTENTION / DEVICE END INTR 7= I-FACE DATA
2202**
002D44 706E 2203+INTR CPLSR R3 COPY STATUS ANY LEVEL INTO R3
002D46 336A 2204+ SRL 13,R3 POSITION INDICATORS IN R3
002D48 4424 2A5E 2205+ MVA OPTN1,R4 SET UP BASE ADRS
002D4C 4C28 2206+ TBTR (R4,CS) IS CS IN PROGRESS
002D4E 1006 2207+ JOFF INTES * NO
002D50 4C6A 2208+ TBTS (R4,CE) TURN ON CYCLE STEAL INTER ERROR
002D52 6F0D 2A72 2209+ MVM R7,DEV4 SAVE CS ERR ISB VALUE, BITS 0-7
002D54 C328 2A73 2210+ MVB R3,DEV4+1 * AND THE COND CODE
002D5A 500A 2211+ J INTR1
002D5C 4C24 2212+INTES TBT (R4,XE) TEST EXPECTED ATTN / ERROR IND
002D5E 1002 2213+ JOFF INTES BCH IF NOT EXPECTED
002D60 F304 2214+ CBI 4,R3 IS THIS AN 'ATTENTION' INTR
002D62 1006 2215+ JE INTR1 * YES, BCH TO END INTR SEQUENCE
002D64 4C61 2216+INTES TBTS (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
002D66 5004 2217+ J INTR1
2218**
2219** THE ERROR INTERRUPT USES THE SAME
ENDING SEQUENCE AS THE NORMAL INTR
2220** *****14APR76
2221**
2222**
2223** SOUBROUTINE
2224**
2225** OKAY INTERRUPT RUNS ON INTERRUPT LEVEL 'SINTL'
2226**
2227** PURPOSE
2228**
2229** TO CHECK THE INTERRUPT AND CONTINUE THE TEST
2230**
2231** CALLING SEQUENCE
2232**
2233** SUPERVISOR WILL ENTER HERE IF INTR CC IS AS REQUESTED
2234** THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE
2235** AFTER THE SPECIAL PART HAS BEEN COMPLETED AND THE
2236** COMMON SECTION IS HANDLED HERE.
2237**
2238** RETURN CONTROL
2239**
2240** SVC EXIT RETURN TO USER VIA SUPVR
2241**
2242** *****
2243** INTOK CPLSR R3 COPY STATUS ANY LEVEL INTO R3
002D68 706E 2244+ SRL 13,R3 POSITION INDICATORS IN R3
002D6A 336A 2245+ MVA OPTN1,R4 SET UP BASE ADRS
002D6C 4424 2A5E 2246+INTR1 TBTS (R4,IN) SET INTERRUPT RECEIVED
002D70 4C63 2247+ TBT (R4,CS) IS 'CS IN PROGRESS' ON
002D72 4C28 2248+ JON INTR2 * YES, BCH AROUND UPDATE
002D74 1204 2249+ MVB R3,SIOIN+1 SAVE INTERRUPTING CC CODE
002D76 C328 2A67 2250+ MVW R7,$ISB SAVE INTR STATUS AND DEV ADRS
002D7A 6F0D 2A68 2251+INTR2 EQU *
002D7E 3521 2252+ CPCL R5 CURRENT LEVEL COPIED BY DCP
2253+ SLL 4,R5 POSITION INTR LEVEL AND PUT

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002D80 0501 2254+ ABI 1,R5 \* IN 'I' BIT IL
002D82 CD24 2AA4 2255+ CW \$INTL,R5 IS THIS THE CORRECT INTR LEVEL IL
002D86 1002 2256+ JE INTR3 \* YES, GO EXIT THIS LEVEL IL
002D88 4C66 2257+ TBT (R4,\$LE) SET INTR LEVEL ERROR CONTROL BIT IL
002D89 4C61 2258+ TBT (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT IL
002D8C 4CA2 2259+INTR3 TBT (R4,XI) WAS INTERRUPT EXPECTED IL
002D8E 1204 2260+ JON INTRX \* YES, EXIT C/P THIS INTR LEVEL IL
002D90 4C60 2261+ TBT (R4,MI) \* NO, SET MYSTERY INTR CONTROL BIT IL
002D92 F304 2262+ CBI 4,R3 ATTENTION INTERRUPT? IL
002D94 1001 2263+ JE INTRX YES IL
002D96 4C6C 2264+ TBT (R4,NG) ERROR, UNEXPECTED INTERRUPT IL
002D98 6006 2265+INTRX SVC EXIT THIS LEVL VIA SUPVR TO PGM IL
2267+\*\*\*\*\*03FEB76\*\*
2268+\*\*
2269+\*\* THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT
2270+\*\* HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
2271+\*\* RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
2272+\*\*
2273+\*\*
002D9A 4CA4 2274+XIOCK TBT (R4,XE) WAS AN ERROR EXPECTED
002D9C 6AC0 0002 2275+ BN (R6,2) \* YES, EXIT THIS ROUTINE
002DA0 4CA8 2276+ TBT (R4,CS) WAS A/D TO CS IN PROGRESS
002DA2 1006 2277+ JOFF XIOCV \* NO, CONTINUE CHECKING
002DA4 4CA2A 2278+ TBT (R4,CE) IS CS IN AN ERR CONDITION
002DA6 1002 2279+ JOFF XIOCO \* NO, BCH
002DA8 68D2 0000 2280+ B (R6)\* CS ERROR
002DAC 4C69 2281+XIOCO TBT (R4,CSA) TURN ON CS STATS AVAIL FLAG
002DAE 5601 2282+ BXS (R6,2) GO TO USER
002DB0 4C21 2283+XIOCV TBT (R4,ER) WAS ERROR INTR CONTROL BIT ON
002DB2 100D 2284+ JOFF XIOCX \* NO, EXIT THIS ROUTINE
2285+\*\*
002DB4 C520 2A67 2286+ MVB \$IOIN+1,R5 GET LAST INTR CC CODE
002DB8 F502 2287+ CBI 2,R5 IS THIS CC=2
002DBA 1003 2288+ JE XIOCO YES
002DBC F506 2289+ CBI 6,R5 IS THIS CC=6
002DBE 68D1 0000 2290+ BNE (R6)\* \* NO, BCH TO ERROR HANDLER
002DC2 C520 2A68 2291+XIOCO MVB \$ISB,R5 GET LAST ISB DATA BYTE AND IF CS
002DC6 6A00 2CD4 2292+ BN XIOCS-4 \* AVAILABLE, GO AND GET IT
002DCA 68D2 0000 2293+ B (R6)\* ERROR
002DCE CB25 2A62 2294+XIOCX MVBZ OPTN3,R3 CLEAR OUT OPTION 3 CNTL BITS
002DD2 5601 2295+ BXS (R6,2) RETURN TO USER VIA REG 6
2296+\*\*
2297+\*\* I/O PARAMETER LIST
2298+\*\*
2299+IOBLK DC A (DEVADD) ADRS OF DEVICE ADRS
2300+ DC A (XIOER) ERROR ROUTINE ADRS
2301+IODCB DC A (\*-\*) DCB ADRS OR LEVEL & INTR
2302+IOMOD DC A (\*-\*) MODIFIER
2303+ DC A (\*-\*) ADRS OF LAST SVC CALL
2304+IORSF DC A (\*-\*) SECOND WORD OF LAST IDCB
2305+\*\*
2306+\*\* INTERRUPT CONTROL BLOCK FOR I/O COMMANDS
2307+\*\*
2308+INTBL DC A (DEVADD) ADRS OF DEVICE ADRS
2309+ DC A (INTOR) INTERRUPT OK RETURN ADRS
2310+ DC A (INTER) INTERRUPT ERROR ADRS
2311+INTCC DC X'0003' INTERRUPT CODE EXPECTED
2313+\*\*\*\*\*11MAY76\*\*
2314+\*\*
2315+\*\* SUBROUTINE
2316+\*\*
2317+\*\* CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE
2318+\*\*
2319+\*\* PURPOSE
2320+\*\*
2321+\*\* TO CONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
2322+\*\* PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICE
2323+\*\* TO INTERRUPT.
2324+\*\*
2325+\*\* CALLING SEQUENCE
2326+\*\*
2327+\*\* THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
2328+\*\*
2329+\*\* --> BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BLK
2330+\*\* --> BAL \$CONP,R6 PREPARE DEVICE ONLY, ALREADY CONNECT
2331+\*\*
2332+\*\* RETURN CONTROL
2333+\*\*
2334+\*\* BXS (R6,2) RETURN TO USER VIA REG 6 IF OKAY
2335+\*\* OR B (R6)\* IF THE DEVICE COULD NOT BE CONNECTED
2336+\*\*
2337+\*\*\*\*\*06APR76\*\*
2338+\$CONC MVB 6,R7 NUMBER OF BYTE TO CLEAR
2339+ MVB 0,R3 \* AND THE DATA TO USE
2340+ MVA DEV1,R5 \* ALONG WITH THE ADRS TO USE
2341+ PPN R3,(R5) \*
2342+ MVBZ OPTN3,R3 CLEAR OLD CONTROLS FOR NEW ROUTINE
2343+ MVA INTBL,R7 SET R7 TO CONTROL BLOCK AND
2344+ SVC CICE \* CONNECT IT TO THIS DEVICE
2345+ BN (R6)\* ERROR RETURN TO USER
2346+\*\*
2347+\$CONP MVB \$INTL,IODCB PUT IN LEVEL & INTR PARAMETER
2348+ MVA IOBLK,R7 SET R7 TO CONTROL BLOCK TO PREPARE
2349+ MVB X'070B', \$IOIN INITIALIZE CONDITION CODE STORAGE
2350+ MVBZ \$ISB,R3 \* AND CLEAR OLD ISB VALUE
2351+ MVA R6,LS1IO SET UP ADDRESS THAT STARTED LAST I/O
2352+ SVC PREP \* AND CALL ON SUPVR
2353+ BXS (R6,2) RETURN TO USER
2355+\*\*\*\*\*06APR76\*\*
2356+\*\*
2357+\*\* SUBROUTINE
2358+\*\*
2359+\*\* DISCONNECT THE INTERRUPT CONTROL BLOCK AND LOG ERRORS
2360+\*\*
2361+\*\* PURPOSE
2362+\*\*
2363+\*\* DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
2364+\*\* SET THE 'NO GOOD' CONTROL BIT, THEN LOG THE DATA THAT HAS
2365+\*\* BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.
2366+\*\*
2367+\*\* CALLING SEQUENCE
2368+\*\*
2369+\*\* THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
2370+\*\*

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
2371+\*\* --> B \$ERR\$ SET 'NG' BIT AND CONVERT DATA TO LOG
2372+\*\* --> B \$CONX RETURN TO MDI SUPERVISOR TO TEST STS
2373+\*\*
2374+\*\* RETURN CONTROL
2375+\*\*
2376+\*\* B TURTN\* RETURN TO MDI
2377+\*\* OR B (R6)\* IF THE DEVICE COULD NOT BE CONNECTED
2378+\*\*
2379+\*\*\*\*\*06FEB76\*\*
2380+\$ERR\$ MVB X'8000',TUSTATUS SET ON 'NO GOOD' STATUS BIT
2381+ MVA HEBLK,R7 GET ADRS OF CONTROL BLOCK
2382+ SVC HTOE CONVERT HEX TO EBC VIS DCP
2383+ MVB X'4040',TWORK+116
2384+ MVB X'4040',TWORK+118
2385+ MVB X'4040',TWORK+120
2386+\$PRNT MVB 4,R5
2387+ MVA TWORK,R3 SET UP BUFFER STORAGE
2388+ MVA R3,BUFPT
2389+ MVA LINE1,R1
2390+ MVB 4,R7
2391+ MVB 8,R6
2392+MVB MVB (R3),(R1)
2393+ MVB 4,R7
2394+ MVB X'40',R2
2395+ MVB R2,(R1)+
2396+ JCT MVB,R6
2397+ MVB 8,R6
2398+ AWI 44,R1
2399+ JCT MVB,R5
2400+ MVA PIDMSG10,PID+2
2401+ MVA FAKETU,3DCADD1
2402+ MVA DCB2PT,3DCADD2
2403+ OWI BIT0080,SUPSTAT
2404+ MVA TUID,R3 SET UP BUFFER STORAGE
2405+ BAL TUMSGWTR\*,R7 GO TO MESSAGE WRITER
2406+\*\*
2407+\$CONX EQU \*
2408+ MVB DEVADD,R7 GET DEVICE ADDRESS FROM MDI
2409+ SVC RICH RELEASE INTERRUPT CONTROL BLOCK
2410+ B TURTN\* RETURN TO MDI SUPERVISOR
2411+\*\*
2412+BEGIN DC A (0009) NUMBER OF LINES TO PRINT
2413+ DC A (0008) LINE LENGTH = 8 CHAR
2414+ DC C' \* \* ABORT'
2415+ DC A (0040) LINE LENGTH = 40 CHAR
2416+ DC C'TUID IOIN ISB INST SECT ID DATA C/SCC '
2417+ DC A (0040) LINE LENGTH = 40 CHAR
2418+LINE1 DC C'
2419+ DC A (0040) LINE LENGTH = 40 CHAR
2420+ DC C'CNTRL DCB1 DCB2 DCB3 DCB4 CHAD BYCT ADRS '
2421+ DC A (0040) LINE LENGTH = 40 CHAR
2422+LINE2 DC C'
2423+ DC A (0040) LINE LENGTH = 40 CHAR
2424+ DC C'CS-0 CS-1 CS-2 CS-3 CS-4 CS-5 CS-6 CS-7 '
2425+ DC A (0040) LINE LENGTH = 40 CHAR
2426+ DC C'
2427+ DC A (0040) LINE LENGTH = 40 CHAR
2428+ DC C'CS-8 CS-9 CS-A CS-B CS-C
2429+ DC A (0040) LINE LENGTH = 40 CHAR
2430+LINE4 DC C'
2431+\*\*
2432+BUFPT DC A (\*-\*)
2433+DC2PT DC A (BEGIN)
2434+FIXTU DC X'0101'
2435+FAKETU DC X'0101'
2436+PIDMSG10 EQU X'F1F0'
2437+BIT0080 EQU X'0080'
2438+\*\*
2439+\*\* DATA CONTROL BLOCK FOR CONVERTING HEX TO EBCDIC
2440+\*\*
2441+HEBLK DC A (58) NUMBER OF BYTES TO CONVERT
2442+ DC A (\$TUID) FROM ADRS
2443+ DC A (TWORK) AND THE TO ADRS
2444+ COPY T7A06 07FEB78
2445 T7A06 TUIT
2446+\*\*\*\*\*06FEB76\*\*
2447+\*\*
2448+\*\* TEST UNIT
2449+\*\*
2450+\*\* ISSUE CYCLE STEAL COMMANDS
2451+\*\*
2452+\*\* PURPOSE
2453+\*\*
2454+\*\* TO RECALIBRATE, SEEK TO SPECIFIED CYLINDER, READ SECTOR ID,
2455+\*\* READ DIAG WORD 1, AND READ VERIFY.
2456+\*\*
2457+\*\* CALLING SEQUENCE
2458+\*\*
2459+\*\* MDI=\$TUXX,T7A06,XX,XXXX,XX,PKNG=4,PARM=XXXX
2460+\*\*
2461+\*\* TURESULS BIT(S) 0 - 7 ..... SENSE BYTE (STATUS)
2462+\*\* . OR 0 - 15 ..... TRACK ID (HD/CYL)/DIAG WORD 1
2463+\*\* . 16 - 31 ..... CYCLE STEAL STATUS WORD 4
2464+\*\* . 32 - 47 ..... CYCLE STEAL STATUS WORD 5
2465+\*\* . 48 - 63 ..... CYCLE STEAL STATUS WORD 11
2466+\*\* . 64 - 79 ..... CYCLE STEAL STATUS WORD 12
2467+\*\*
2468+\*\* RETURN CONTROL
2469+\*\*
2470+\*\* B TURTN\* RETURN TO MDI SUPERVISOR
2471+\*\*
2472+\*\*\*\*\*06FEB76\*\*
2473+T7A06 MVB R7,TURTN SAVE RETURN ADDRESS
2474+ MVB X'7A06',STUID SAVE TU ID FOR DISPLAY
2475+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
2476+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
2477+ DC A (\$ERR\$) ERROR ADRS FOR INVALID PREP
2478+\*\*
2479+ TBT (R4,XE)
2480+ CWI X'0001',TUPARM1\* SET EXPECTED ERROR CNTL BIT ON
2481+ JNE CHK1 WANT TO RECALIBRATE FILE?
2482+ BAL \$RECL,R6 NO - CHECK FOR NEXT OP
2483+ DC A (\$ERR\$) RECALIBRATE FILE
2484+ B SNSTS \* BRANCH TO READ/STORE SENSE BYTE



LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
00301A	403F 189A 0000	2485	* CHK1 CWI X'0000',TUPARM1*	IS A SEEK OPERATION TO BE PERFORMED?
003020	180A	2486	CHK2 JNE CHK2	NO - GO ISSUE READ SECTOR ID OP
003022	C825 2AF6	2488	MVWZ SKDCB,R0	LOAD SEEK CNTL WD IN DCB
003026	8838 189C 2AFA	2489	MVW TUPARM2*,SKDCB+4	LOAD HD/CYL NUMBERS IN SEEK DCB
00302C	6E03 2BC0	2490	BAL \$SEEK,R6	SEEK TO SPECIFIED CYL
003030	2E1C	2491	DC A(\$ERR\$)	*
003032	6802 30B6	2492	B SNSTS	BRANCH TO READ/STORE SENSE BYTE
003036	403F 189A 201C	2493	* CHK2 CWI X'201C',TUPARM1*	WANT TO READ SECTOR ID?
00303C	181D	2495	JNE CHK3	NO - GO ISSUE READ SECTOR ID OP
00303E	4020 2AE6 201C	2496	MVWI X'201C',RSDCB	LOAD READ SECTOR ID CNTL WD
003044	4020 2AF2 0004	2497	MVWI 4,RSDCB+12	LOAD BYTE CNT TO READ ONE ID
00304A	4020 2AE8 0000	2498	MVWI 0,RSDCB+2	LOAD PHYSIC# ZERO IN READ ID DCB
003050	6E03 2BD0	2499	RDDID BAL \$RDDID,R6	READ SECTOR ID
003054	2E1C	2500	DC A(\$ERR\$)	*
003056	402B 2A6C F700	2501	TWI X'F700',SCTID	FLAG = 00 OR 04?
00305C	1009	2502	JOFF VRID	YES - LOAD TRACK ID IN 'TURESUL'
00305E	4029 2AE8 0001	2503	AWI 15,RSDCB+2	INCREMENT PHYSIC# TO READ NEXT ID
003064	402F 2AE8 0021	2504	CWI 35,RSDCB+2	HAVE ALL IDS BEEN CHECKED?
00306A	6800 30B6	2505	J SNSTS	YES - SAVE STATUS, RETURN TO MDI
00306E	50F0	2506	B RDDID	*
003070	8828 2A6E 18C8	2507	VRID MVW SCTID+2,TURESUL	MOVE TRACK ID TO TU RESULTS BUFF
003076	501F	2508	J SNSTS	GO GET CS STATUS
003078	403F 189A 0011	2509	* CHK3 CWI X'0011',TUPARM1*	WANT TO RD VERIFY REC? (AUTO SK EN)
00307E	180C	2511	JNE CHK4	NO - GO ISSUE READ DIAG WORD 1 OP
003080	4020 2B26 0011	2512	MVWI X'0011',VRDCB	LOAD RD VERIFY CNTL WD (AUTO SK EN)
003086	8838 189C 2B2A	2513	MVW TUPARM2*,VRDCB+4	LOAD HEAD/CYL#'S IN DCB
00308C	C825 2B28	2514	MVWZ VRDCB+2,R0	SETUP PHYSICAL SECTOR# 0 IN DCB
003090	6E03 2C12	2515	BAL \$RDVY,R6	READ VERIFY RECORD
003094	2E1C	2516	DC A(\$ERR\$)	*
003096	500F	2517	J SNSTS	GO GET CS STATUS
003098	4020 2B36 2088	2519	* CHK4 MVWI X'2088',RDCB	LOAD READ DIAG WORD 1 DCB CNTL WD
00309E	4020 2B42 0002	2520	MVWI 2,RDDCB+12	LOAD BYTE CNT TO READ DIAG WD 1
0030A4	4020 2B44 33EC	2521	MVA R6BUF,RDDCB+14	SETUP ADDRESS R6BUF IN DCB
0030AA	6E03 2BFE	2522	BAL \$RD,R6	READ DIAG WORD 1
0030AE	2E1C	2523	DC A(\$ERR\$)	ABORT TEST IF OIO ERROR
0030B0	8828 33EC 18C8	2524	MVW R6BUF,TURESUL	MOVE DATA IN WD 1 TO TURESULS BUF
0030B6	6E03 2CD8	2525	SNSTS BAL XIOCS,R6	GET CYCLE STEAL STATUS
0030BA	2E1C	2526	DC A(\$ERR\$)	ABORT TEST IF ERROR
0030BC	403E 189A 2000	2527	TWI X'2000',TUPARM1*	WAS A READ OP JUST EXECUTED?
0030C2	1205	2528	JON X7A06	YES - MOVE CS STATUS WDS TO TU BF
0030C4	8028 2A6F 18C8	2529	MVB CST16+1,TURESUL	MOVE SENSE (STATUS) IN 'TURESUL'
0030CA	C025 18C9	2530	MVBZ TURESUL+1,R0	SET BYTE TO ZERO
0030CE	9028 2A8C 18CA	2531	MVD CST15,TURESUL+2	MOVE CS STATUS WORDS
0030D4	9028 2A9A 18CE	2532	MVD CST12,TURESUL+6	4,5,11,12 TO 'TURESULS'
0030DA	6802 2E7E	2533	TXIT	RETURN TO MDI
		2534	B \$CONX	RETURN TO MDI CONTROLLER
		2535	*****	*****
		2537	COPY T7A07	07FEB78
		2538	T7A07 TUIT	
		2539	*****	*****06FEB76**
		2540	*****	*****
		2541	TEST UNIT	
		2542	*****	*****
		2543	MOVEABLE HEADS READ/WRITE TEST	1/09/79
		2544	*****	*****
		2545	PURPOSE	
		2546	*****	*****
		2547	TO VERIFY THE READ/WRITE CAPABILITY OF THE MOVEABLE HEADS	
		2548	*****	*****
		2549	CALLING SEQUENCE	
		2550	*****	*****
		2551	GET FILE CONFIGURATION	
		2552	AFTER EACH HEAD SELECTION READ AND VERIFY SECTOR ID.	
		2553	WRITE 5 RECORDS OF DATA/HEAD ON CYLINDER 359.	
		2554	READ/STORE/CHECK SENSE AFTER EACH WRITE.	
		2555	READ VERIFY AFTER EACH PATTERN AND READ/STORE/CHECK SENSE.	
		2556	PERFORM ABOVE OPERATIONS FOR EACH MOVEABLE HEAD.	
		2557	*****	*****
		2558	MDI=\$TUXX,T7A07,01,00,EQ	
		2559	*****	*****
		2560	TURESUL BIT(S) 0 .....	SENSE ERROR AFTER WRITE
		2561	1 .....	BUS PARITY CHECK
		2562	2 .....	62PC INTERFACE ERROR
		2563	3 .....	ERROR AFTER READ VERIFY
		2564	4 .....	TRACK ID INCORRECT
		2565	16 - 47 .....	CSS WORDS 4 AND 5
		2566	48 - 79 .....	CSS WORDS 11 AND 12
		2567	80 - 111 .....	SECTOR ID
		2568	*****	*****
		2569	RETURN CONTROL	
		2570	*****	*****
		2571	B TURTN*	RETURN TO MDI SUPERVISOR
		2572	*****	*****
		2573	*****	*****
		2574	T7A07 MVW R7,TURTN	SAVE RETURN ADDRESS
		2575	MVWI X'7A07',STUID	SAVE TU ID FOR DISPLAY
		2576	MVA OPTN1,R4	SET UP POINTER ADRS IN R4
		2577	BAL \$CONC,R6	CLEAR DEV DEP STG AND CONNECT I/O BL
		2578	DC A(\$ERR\$)	ERROR ADRS FOR INVALID PREP
		2579	*****	*****
		2580	MVDZ TURESUL,R0	CLEAR RESULTS AREA
		2581	MVDZ TURESUL+4,R0	CLEAR RESULTS AREA
		2582	MVDZ TURESUL+8,R0	CLEAR RESULTS AREA
		2583	MVWZ TURESUL+12,R0	CLEAR RESULTS AREA
		2584	BAL \$WBUF,R6	INITIALIZE THE WRITE BUFFER
		2585	MVWI X'0028',VRDCB	WRITE DATA CNTL WD
		2586	MVWI X'0019',VRDCB	LOAD VERIFY CNTL WORD FOR DCB
		2587	MVWI 1280,VRDCB+12	SET BYTE CNT TO WRITE 5 RECORDS
		2588	MVW VRDCB+12,VRDCB+12	SETUP BYTE CNT IN READ VERIFY DCB
		2589	MVA WRBUF,VRDCB+14	LOAD ADDR OF WRITE BUF IN WR DCB
		2590	MVWZ SKDCB,R0	LOAD SEEK CNTL WD IN DCB
		2591	MVWI 35,SKDCB+4	INITIALIZE HEAD# TO 0, CYLINDER 359
		2592	BAL CNFIG,R6	GET NO. OF MOVEABLE HEADS ON FILE
		2593	MVW MVHDS,HDCNT	STORE NO. OF MOVEABLE HEADS IN CTR
		2594	JNEV NPTHD+6	SELECT HEAD 0 IF NO FIXED HEADS
		2595	AWI X'0400',SKDCB+4	ELSE - SELECT NEXT HEAD#
		2596	BAL \$SEEK,R6	SELECT HEAD FOR READ/WRITE TEST
		2597	DC A(\$ERR\$)	ABORT TEST IF ERROR
		2598	TBTR (R4,ER)	WAS THERE AN INTERRUPT ERROR?
		2599	BON \$ERR\$	YES - ABORT TEST

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
00314C	6E03 32EC	2600	BAL TWOSC,R6	FIND FIVE GOOD CONSECUTIVE SECTORS
003150	4A04	2601	TBTR (R2,4)	CHECK IF ID CORRECT
003152	1002	2602	JOFF NXHD1	OK CONTINUE
003154	4A44	2603	TBTS (R2,4)	SET INCORRECT ID
003156	5029	2604	J X7A71	GET STATUS
003158	4224 18C8	2605	NXHD1 MVA TURESUL,R2	SETUP ADDR OF TU RESULTS BUFF IN R2
00315C	8828 341E 2B18	2606	MVW RCDNO,VRDCB+2	LOAD STARTING RECORD# IN WRITE DCB
003162	8828 2AFA 2B1A	2607	MVW SKDCB+4,VRDCB+4	LOAD HEAD/CYLINDER#'S IN WRITE DCB
003168	8828 2AFA 2B2A	2608	MVW SKDCB+4,VRDCB+4	LOAD HEAD/CYLINDER#'S IN VERIFY DCB
00316E	6E03 2C1A	2609	BAL \$WRT,R6	WRITE 5 RECORDS OF DATA
003172	2E1C	2610	DC A(\$ERR\$)	ABORT TEST IF ERROR
003174	4CA1	2611	TBTR (R4,ER)	WAS THERE AN INTERRUPT ERROR?
003176	1002	2612	JOFF NXHD2	NO CONTINUE TEST
003178	4A40	2613	TBTS (R2,0)	SET WRITE ERROR
00317A	5017	2614	J X7A71	GET STATUS
00317C	8828 2B18 2B28	2615	NXHD2 MVW VRDCB+2,VRDCB+2	LOAD RECORD# IN PD VERIFY DCB
003182	6E03 2C12	2616	BAL \$RDVY,R6	VERIFY 5 RECORDS OF DATA
003186	2E1C	2617	DC A(\$ERR\$)	ABORT TEST IF ERROR
003188	4CA1	2618	TBTR (R4,ER)	WAS THERE AN INTERRUPT ERROR?
00318A	1002	2619	JOFF NXHD3	NO CONTINUE TEST
00318C	4A43	2620	TBTS (R2,3)	SET READ VERIFY ERROR
00318E	500D	2621	J X7A71	GET STATUS
003190	402B 341E 0020	2622	NXHD3 TWI X'0020',RCDNO	HAVE 2ND DATA RECORDS BEEN TESTED?
003196	1204	2623	JON NXHD4	YES GOTO TEST NEXT HEAD
003198	4029 341E 0020	2624	AWI X'0020',RCDNO	CHECK SECOND DATA RECORDS
00319E	50DC	2625	J NXHD1	GO CHECK DATA RECORDS
0031A0	402E 33F2 0001	2626	NXHD4 SWI 1,HDCNT	HAVE ALL MOVEABLE HEADS BEEN TESTED?
0031A6	11C9	2627	JP NXTHD	NO - SELECT NEXT HEAD FOR WRITE
0031A8	5010	2628	J X7A07	GET STATUS
0031AA	6803 2CD8	2629	NXHD4 X7A71 BAL XIOCS,R6	GO READ STATUS
0031AE	2E1C	2630	DC A(\$ERR\$)	ABORT TEST IF ERROR
0031B0	402B 2A8C 0008	2631	TWI X'0008',CSTL5	WAS THERE A CYCLE STEAL STATUS ERROR?
0031B6	6A00 2E1C	2632	BON \$ERR\$	YES - ABORT TEST
0031BA	402B 2A8C 0001	2633	TWI X'0001',CSTL5	INTERFACE ERROR?
0031C0	1211	2634	JON PCERR	YES - CHECK FOR PARITY ERROR
0031C2	402B 2A8E 0080	2635	TWI X'0080',CSTL6	STATUS = /80?
0031C8	120B	2636	JON PRTY	PARITY ERROR
0031CA	9028 2A8C 18CA	2637	X7A07 MVD CSTL5,TURESUL+2	SAVE CSS WORDS 4, 5, 12, AND 13
0031D0	9028 2A9A 18CE	2638	MVD CST12,TURESUL+6	* IN TURESULS BUFFER
0031D6	9028 2A6C 18D2	2639	MVD SCTID,TURESUL+10	SAVE SECTOR ID IN TU RESULTS BUFFER
0031DC	6802 2E7E	2640	TXIT	
		2641	B \$CONX	RETURN TO MDI CONTROLLER
		2642	*****	*****
		2643	PRTY TBTS (R2,1)	BUS PARITY ERROR
		2644	J X7A07	SETUP STATUS IN TU RESULTS BUFFER
		2645	PCERR TBTS (R2,2)	INTERFACE ERROR
		2646	TWI X'0020',CST13	BUS PARITY CHECK?
		2647	JON PRTY	YES - SET PARITY ERROR BIT ON
		2648	J X7A07	SETUP STATUS IN TU RESULTS BUFFER
		2649	*****	*****
		2650	*****	*****
		2651	* SUBROUTINE	
		2652	*****	*****
		2653	FILE CONFIGURATION	
		2654	*****	*****
		2655	PURPOSE	
		2656	*****	*****
		2657	TO GET FILE CONFIGURATION AND SET UP INDICATORS ACCORDINGLY.	
		2658	*****	*****
		2659	CALLING SEQUENCE	
		2660	*****	*****
		2661	BAL CNFIG,R6	GET FILE CONFIGURATION
		2662	*****	*****
		2663	RETURN	
		2664	*****	*****
		2665	B (CNFGX+2)	RETURN TO CALLER
		2666	*****	*****
		2667	*****	*****
		2668	*****	*****
		2669	*****	*****
		2670	CNFIG MVW R6,CNFGX+2	SAVE RETURN ADDRESS
		2671	BAL XIOCS,R6	ISSUE CSS CMD TO GET FILE CONFIG
		2672	DC A(\$ERR\$)	ABORT TEST IF ERROR
		2673	TWI X'0008',CSTL5	WAS THERE A CS STATUS ERROR?
		2674	BON \$ERR\$	YES - ABORT TEST
		2675	MVW CSTL5,R0	LOAD FILE CONFIG STATUS WD IN REG
		2676	SLL 5,R0	*
		2677	SRL 13,R0	POSITION IN RIGHTMOST BYTE
		2678	JZ 3,PCGR	PRINT MSG IF FILE NOT ATTACHED
		2679	CBI 3,RO	ARE FIXED HEADS AVAILABLE ON FILE?
		2680	JLE NFXH	NO - GO SETUP HEAD PARAMETER
		2681	CBI 5,RO	CHECK FOR INVALID CNFIG
		2682	JLE PCGER	PRINT MSG IF INVALID
		2683	MVWI 4,MVHDS	SETUP HEAD PARAMETER FOR FIXED
		2684	CBI 7,R0	* HEAD MODEL
		2685	JNE CNFGX	*
		2686	AWI 6,MVHDS	*
		2687	J CNFGX	RETURN TO CALLER
		2688	MVWI 3,MVHDS	SETUP HEAD PARAMETER FOR NON-FIXED
		2689	CBI 2,R0	* HEAD MODEL
		2690	JLT CNFGX	*
		2691	JE F29MB	*
		2692	AWI 6,MVHDS	*
		2693	F29MB AWI 2,MVHDS	*
		2694	CNFGX B *	RETURN TO CALLER
		2695	*****	*****
		2696	CFGER B \$ERR\$	INVALID CONFIGURATION - ABORT TEST
		2698	*****	*****
		2699	*****	*****
		2700	* SUBROUTINE	
		2701	*****	*****
		2702	PURPOSE - INITIALIZE WRITE BUFFER	
		2703	*****	*****
		2704	DATA IS SUPPLIED BY OPERATOR, IF ANY BYTE IS '00' OR	
		2705	'FF' DATA WILL DEFAULT TO 'EBGD 6BDB'. EACH TIME	
		2706	DATA BUFFER IS LOADED 'DATA' IS INCREMENTED BY	
		2707	X'4901'. '00' OR 'FF' IS INVALID AFTER INCREMENTING.	
		2708	DATA WILL AUTOMATICALLY BE INCREMENTED TO ELIMINATE	
		2709	INVALID VALUE. NOTE: IF FLAG BIT B48 (OPTION WORD 2	
		2710	BIT 0) IS SET ON BY OPERATOR DATA PATTERN WILL NOT	
		2711	BE INCREMENTED BUT WILL REMAIN FIXED.	
		2712	*****	*****
		2713	CALLING SEQUENCE - BAL \$WBUF,R6	
		2714	*****	*****
		2715	RETURN - BXS (R6)	

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
2716 \*\*\*\*\*
2717 \*
2718 \$WBUF EQU \*
2719 MVWI X'00FF',CDAT INIT CONSTANT
2720 MVWI 4,R1 LOAD COUNT 4 IN REG
2721 MVA \$DATA,R0 ADDR OF DATA FROM OPERATOR
2722 CLOP CB CDAT,(R0)+ CHECK FOR DATA '00'
2723 JE WB DEFAULT TO DATA X'EB6D6BDB'
2724 SWI 1,R1 SUB ONE FROM COUNT
2725 JNZ CLOP REPEAT
2726 MVWI 4,R1 RELOAD COUNT 4 IN REG
2727 MVA \$DATA,R0 ADDR OF DATA FROM OPERATOR
2728 CLOP1 CB CDAT+1,(R0)+ CHECK FOR DATA 'FF'
2729 JE WB DEFAULT TO FIXED DATA
2730 SWI 1,R1 UPDATE LOOP COUNT
2731 JNZ CLOP1
2732 J WB1
2733 MVD WDATA,\$DATA LOAD DATA BUFFER FOR PRINT OUT
2734 WB1 MVWI 1280,R7 WRITE BUFFER SIZE
2735 MVA WRBUF,R3 WRITE BUFFER ADDR
2736 TBT (R4,B48) FIXED DATA PATTERN MODE ON?
2737 JON WB3 YES
2738 MVWI 0,R0 SET UP INCREMENT COUNT
2739 V(1901',R2 \*
2740 WB2 MVD \$DATA,(R3)+ INIT BUFFER
2741 INCR1 AD R1,\$DATA INCREMENT DATA'
2742 TEST CB CDAT+1,\$DATA TEST FOR 'FF' OR '00'
2743 JE INCR \*
2744 CB CDAT+1,\$DATA+1 \*
2745 JE INCR \*
2746 CB CDAT+1,\$DATA+2 \*
2747 JE INCR \*
2748 CB CDAT+1,\$DATA+3 \*
2749 JWB1 \*
2750 CWI 0,CDAT CONSTANT ZERO?
2751 JWB1 YES
2752 MVWI 0,CDAT FORCE CONSTANT TO ZERO
2753 JWB1 TEST
2754 GOON MVWI X'00FF',CDAT RESTORE CONSTANT
2755 AWI -4,R7 DECREMENT BYTE COUNT
2756 JNZ WB2
2757 BXS (R6) RETURN TO CALLER
2758 INCR MVWI X'00FF',CDAT RESTORE CONSTANT
2759 JWB1 INCR1
2760 MVD \$DATA,(R3)+ LOAD AND INCREMENT DATA BUFFER ADDR
2761 AWI -4,R7 DECREMENT BYTE COUNT
2762 JNZ WB3 LOOP
2763 BXS (R6) RETURN TO CALLER
2764 \*
2766 \*\*\*\*\*
2767 \*
2768 \* SUBROUTINE
2769 \*
2770 \* PURPOSE
2771 \*
2772 \* FIND FIVE GOOD SEQUENTIAL SECTORS
2773 \*
2774 \* CALLING SEQUENCE
2775 \*
2776 \* BAL TWOSC,R6 FIND FIVE GOOD SEQUENTIAL SECTORS
2777 \*
2778 \* RETURN
2779 \*
2780 \* B (TWSC+2) RETURN TO CALLER
2781 \*
2782 \*\*\*\*\*
2783 \*
2784 TWOSC MVW R6,TWSC+2 SAVE RETURN ADDRESS
2785 MVA ORGID,R2 ADDR SECTOR ID'S OF SECTORS FOUND
2786 MVWI 0,LGSEC INIT LOG SECTOR # TO ZERO
2787 MVA 5,CTR03 INIT COUNTER TO COUNT FIVE SECTORS
2788 RT428 BAL CONVTR,R6 CONVERT LOG TO PHY SECTORS
2789 MVW SKDCB+4,RSDCB+4 SETUP HEAD AND CYLINDER #S
2790 MVB PHYSC+1,RSDCB+3 SETUP PHY SEC# IN RD DCB
2791 BAL \$RRID,R6 READ SECTOR ID
2792 DC A(\$ERR\$) ABORT TEST IF ERROR
2793 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
2794 BON IDER YES - ABORT TEST
2795 TWI X'F700',SCTID CHECK THAT SECTOR IS GOOD
2796 JNZ RT430 BCH IF FLAG NOT 00 OR 04
2797 MVB LGSEC+1,R0 CHECK THAT SECTOR ID READ FROM FILE
2798 TWI X'0800',SCTID SECTOR DISPLACED?
2799 JOFF NDSPL NO
2800 CWI 0,R0
2801 JNE NDSPL-2
2802 MVBI X'3E',R0
2803 J NDSPL+2
2804 ABI -1,R0
2805 NDSPL SLL 1,R0 \* IS AS SHOULD BE WHEN THE FLAG
2806 MVB R0,WRSID \* BYTE IS '00' OR '04'
2807 CB SCTID+1,R0 \*
2808 JNE IDER SET INCORRECT SECTOR ID BIT ON
2809 CN SCTID+2,SKDCB+4 VERIFY HEAD AND CYLINDER#S
2810 JNE IDER SET INCORRECT SECTOR ID BIT ON
2811 MVD SCTID,(R2)+ SAVE SECTOR ID IF OK
2812 SWI 1,CTR03 CRT - 1
2813 JZ TWSC1 FIVE SECTORS VALIDATED-RETURN
2814 AWI 1,LGSEC LOGICAL SECTOR PLUS ONE
2815 CWI 31,LGSEC HAVE ALL SECTORS BEEN CHECKED?
2816 JNE RT428 NO - CHECK NEXT SECTOR
2817 B \$ERR\$ ABORT TEST IF NOT 5 GOOD CONSECT SEC
2818 RT430 JWB1 RESET COUNTER
2819 MVA ORGID,R2 REINITIALIZE SECTOR ID BUFFER AREA
2820 JWB1 RT429 REPEAT SEARCH
2821 SWI 4,LGSEC STARTING SECT# OF GOOD SECTORS
2822 MVB LGSEC+1,RCND0+1 SETUP RECORD NUMBER
2823 TWSC B \*-+ RETURN TO CALLER
2824 \*
2825 IDER MVA TURESUL,R2 SET INCORRECT SECTOR ID BIT ON
2826 TBTS (R2,4) \* IN TU RESULTS BUFFER
2827 J TWSC RETURN TO USER
2828 \*\*\*\*\*
2830 \*
2831 \* SUBROUTINE

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
2832 \*
2833 \* SECTOR CONVERSION SUBROUTINE
2834 \*
2835 \* PURPOSE
2836 \*
2837 \* CONVERT LOGICAL SECTOR NUMBER TO A PHYSICAL SECTOR NUMBER.
2838 \* PHYSICAL SECTOR # WILL BE STORED IN 'PHYSC' WHEN FINISHED.
2839 \*
2840 \* CALLING SEQUENCE
2841 \*
2842 \* BAL CONVTR,R6 CONVERT TO PHYSICAL SECTOR #
2843 \*
2844 \* THE FOLLOWING MUST BE SETUP PRIOR TO CALLING:
2845 \* 1. 'LGSEC' MUST DEFINE SECTOR TO BE CONVERTED
2846 \* 2. THE HEAD # MUST HAVE BEEN STORED IN 'SKDCB+4'
2847 \*
2848 \* RETURN
2849 \*
2850 \* B (R6) RETURN TO CALLER
2851 \*
2852 \*\*\*\*\*
2853 CONVTR EQU \*
2854 MVB LGSEC+1,PHYSC+1 GET LOGICAL SECTOR # TO BE CONVERTED
2855 TWI X'4000',SKDCB+4 IS SECTOR# ON FIXED HEAD TRACK?
2856 JON CNVTX YES - DO NOT CONVERT
2857 CWI 32,LGSEC LOGICAL SECTOR # EQUAL TO 32?
2858 JWB1 CNVTX YES - DO NOT CONVERT
2859 MVB SKDCB+4,R0 GET HEAD NUMBER
2860 SRL 2,R0 POSITION IN LEFTMOST BYTE
2861 CBI 3,R0 CONVERT HEAD NUMBER TO BASE HEAD
2862 JLE HD2 \* NUMBERS 0, 1, 2, OR 3
2863 CBI 7,R0 \* IF HEAD NUMBER IS
2864 JLE HD1 \* GREATER THAN 3
2865 SWI 4,R0 \*
2866 HD1 CBI 0,R0 BASE HEAD EQUAL TO 0?
2867 HD2 JE CNVTX YES - DO NOT CONVERT SECTOR #
2868 JE CBI 2,R0 BASE HEAD EQUAL TO 2?
2869 JE CBT2 YES - GO CONVERT SECTOR#
2870 JLT CVT1 CONVERT SECTOR # FOR BASE HEAD 1
2871 AWI 8,PHYSC \*
2872 AWI 8,PHYSC \*
2873 AWI 8,PHYSC \*
2874 CWI 32,PHYSC CONVERTED SUM > OR = 32?
2875 JLT CNVTX NO - GO EXIT SUBROUTINE
2876 SWI 32,PHYSC \*
2877 B (R6) RETURN TO CALLER
2878 \*
2879 COPY T7A08 07FEB78
2880 \*
2881 RGBUF DC 2F'0'
2882 CDAT DC X'00FF' INVALID DATA CONSTANT
2883 HDCNT DC A(\*-\*)
2884 MVHDS DC A(\*-\*)
2885 ORGID DC 20A(\*-\*)
2886 RCDNO DC A(\*-\*)
2887 RDBUF DS 130F
2888 WRBUF DS 640F
2889 \*
2890 T7A08 TUIT 07FEB78
2891 \*\*\*\*\*06FEB76\*\*
2892 \*
2893 \*
2894 \* TEST UNIT
2895 \*
2896 \* STORE ERROR HALT CODE, STATUS, AND SENSE BYTES
2897 \*
2898 \* PURPOSE
2899 \*
2900 \* TO FETCH AND STORE THE DIAGNOSTIC SENSE BYTE AND DIAG SENSE
2901 \* BYTES 1,2,3 INTO THE TU WORK AREA ('TUWORK'). ALSO STORE ANY
2902 \* ERROR HALT CODE PASSED TO THIS TU.
2903 \*
2904 \* CALLING SEQUENCE
2905 \*
2906 \* FETCH SENSE AND SENSE BYTES 1,2,3 FROM THE DISK UNIT.
2907 \* LOAD SENSE BYTES INTO MAIN STG AND SAVE. STORE ERROR HALT CODE
2908 \* IF ANY.
2909 \*
2910 \* MDI=\$TUXX,T7A08,,,PLNG=1,PARM=C (C=HALT CODE)
2911 \*
2912 \* TUWORK BITS 0-7.....ERROR HALT CODE
2913 \* 8-15.....STATUS BYTE
2914 \* 16-31.....SINGLE SHOT SENSE BYTES 1 & 2
2915 \* 32-39.....SINGLE SHOT SENSE BYTE 3
2916 \* 40-47.....NOT USED
2917 \* 48-63.....MULTISAMPLE SENSE BYTES 1 & 2
2918 \* 64-78.....MULTISAMPLE SENSE BYTE 3 &
2919 \* WRAP BYTE
2920 \*
2921 \* RETURN CONTROL
2922 \*
2923 \* B TURTN\* RETURN TO MDI SUPERVISOR
2924 \*
2925 \*\*\*\*\*
2926 T7A08 MVW R7,TURTN SAVE RETURN ADDRESS
2927 MVWI X'1A08',STUID SAVE TU ID FOR DISPLAY
2928 MVA OPTN,R4 SET UP POINTER ADRS IN R4
2929 BAL \$CONC,R6 CLEAR DEV DEB STG AND CONNECT I/O BL
2930 DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
2931 \*
2932 MVB TUPARM1\*,TUWORK SAVE ERROR HALT CODE
2933 BAL XIOCS,R6 GET CYCLE STEAL STATUS
2934 DC A(\$ERR\$) ABORT ON ERROR
2935 MVB CSTL6+1,TUWORK+1 SAVE THE SENSE IN TUWORK
2936 MVD CSTL5,TUWORK+2 SAVE THE STATUS WORDS
2937 MVWI X'0055',TOMOD LOAD SINGLESAMPLE PULSE IDCB CMD WD
2938 BAL \$WRTO,R6 EXECUTE SINGLESAMPLE PULSE TEST
2939 DC A(\$ERR\$) ABORT TEST IF ERROR
2940 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
2941 BAL XIOCS,R6 GET CYCLE STEAL STATUS
2942 DC A(\$ERR\$) ABORT ON ERROR
2943 MVD CST12,TUWORK+6 SAVE THE DIAG. SENSE BYTES
2944 MVWI X'0056',TOMOD LOAD MULTISAMPLE PULSE IDCB CMD WD
2945 BAL \$WRTO,R6 EXECUTE MULTISAMPLE PULSE TEST
2946 DC A(\$ERR\$) ABORT TEST IF ERROR

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
003A76 4CA1 2947 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
003A78 4020 2DDA 0057 2948 HWVI X'0057',IOMOD LOAD WRAP BYTE IDCB CMD WD
003A7E 6E03 2C60 2949 BAL \$WRTO,R6 FECH WRAP BYTE
003A82 2E1C 2950 DC A(\$ERR\$) ABORT TEST IF ERROR
003A84 4CA1 2951 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
003A86 6E03 2CD8 2952 T7A88 BAL X'IOCS,R6 GET CYCLE STEAL STATUS
003A88 2E1C 2953 DC A(\$ERR\$) ABORT ON ERROR
003A8C 9028 2A9A 1824 2954 MVD CST12,TUWORK+10 SAVE THE DIAG. SENSE BYTES
003A92 8828 181A 18C8 2955 HWV TUWORK,TURESUL MOVE INTO TU RESULTS AREA
003A98 9028 181C 18CA 2956 MVD TUWORK+2,TURESUL+2 \*
003A9E 9028 1820 18CE 2957 MVD TUWORK+6,TURESUL+6 \*
003AA4 9028 1824 18D2 2958 MVD TUWORK+10,TURESUL+10 \*
003AAA 402B 181C 0001 2959 TWI X'0001',TUWORK+2 CHECK INTERFACE ERROR?
003AB0 1202 2960 JON T7A89 YES EXIT
003AB2 C025 18D5 2961 HWBZ TURESUL+13,R0 CLEAR WRAP BYTE IF NO ERROR
003AB6 6802 2E7E 2962 T7A89 TXIT
2963 T7A89 B \$CONX RETURN TO MDI CONTROLLER
2964 \*\*\*\*\*
2966 COPY T7A17 07FEB78
2967 T7A17 TUIT
2968 \*\*\*\*\*06FEB76\*\*
2969\*\*
2970\*\* TEST UNIT
2971\*\*
2972\*\* FIXED HEADS READ/WRITE TEST
2973\*\*
2974\*\* PURPOSE
2975\*\*
2976\*\* TO VERIFY THE READ/WRITE CAPABILITY OF FIXED HEADS.
2977\*\*
2978\*\* CALLING SEQUENCE
2979\*\*
2980\*\* GET FILE CONFIGURATION.
2981\*\* AFTER EACH HEAD SELECTION, READ AND VERIFY SECTOR ID.
2982\*\* WRITE 5 RECORDS OF DATA/HEAD ON CYLINDER 359.
2983\*\* READ/STORE/CHECK SENSE AFTER EACH WRITE.
2984\*\* READ VERIFY AFTER EACH PATTERN AND READ/STORE/CHECK SENSE.
2985\*\* PERFORM ABOVE OPERATIONS FOR EACH FIXED HEAD.
2986\*\*
2987\*\* MDI=\$TUXX,'T7A17,01,00,EQ'
2988\*\*
2989\*\* TURESUL BIT(S) 0 ..... SENSE ERROR AFTER WRITE
2990\*\* 1 ..... BUS PARITY CHECK
2991\*\* 2 ..... 62PC INTERFACE ERROR
2992\*\* 3 ..... EPROR AFTER READ VERIFY
2993\*\* 4 ..... TRACK ID INCORRECT
2994\*\* 16 - 47 ..... CSS WORDS 5 AND 6
2995\*\* 48 - 79 ..... CSS WORDS 12 AND 13
2996\*\* 80 - 111 ..... SECTOR ID
2997\*\*
2998\*\* RETURN CONTROL
2999\*\*
3000\*\* B TURTN\* RETURN TO MDI SUPERVISOR
3001\*\*
3002\*\*\*\*\*
3003 T7A17 MWV R7,TURTN SAVE RETURN ADDRESS
3004 HWVI X'7A17',STUID SAVE TU ID FOR DISPLAY
3005 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
3006 BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
3007 DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
3008\*\*
3009 MVDZ TURESUL,R0 CLEAR RESULTS AREA
3010 HWVZ TURESUL+4,R0 CLEAR RESULTS AREA
3011 MVDZ TURESUL+8,R0 CLEAR RESULTS AREA
3012 MWVZ TURESUL+12,R0 CLEAR RESULTS AREA
3013 BAL \$WBUFF,R6 INITIALIZE THE WRITE BUFFER
3014 MWVI X'0028',WRDCB WRITE DATA CNTL WD
3015 MWVI X'0019',VRDCB LOAD VERIFY CNTL WORD FOR DCB
3016 MWVI 1280,WRDCB+12 SET BYTE CNT TO WRITE 5 RECORDS
3017 MWV WRDCB+12,VRDCB+12 SETUP BYTE CNT IN READ VERIFY DCB
3018 MVA WRBUF,WRDCB+14 LOAD ADDR OF WRITE BUF IN WR DCB
3019 HWVZ SKDCB,R0 LOAD SEEK CNTL WD IN DCB
3020 MWVI X'41FF',SKDCB+4 SETUP INITIAL FXD HEAD ID#
3021 HWVI X'0000',SKDCB+4 INITIALIZE FIXED HEAD COUNTER
3022 BAL \$SECK,R6 SELECT HEAD FOR READ/WRITE TEST
3023 DC A(\$ERR\$) ABORT TEST IF ERROR
3024 TBTR (R4,ER) WAS THERE AN INTERRUPT ERROR?
3025 BON \$ERR\$ YES - ABORT TEST
3026 BAL TWOSC,R6 FIND FIVE GOOD CONSECUTIVE SECTORS
3027 TBT (R2,4) CHECK IF ID CORRECT?
3028 JON X7A17A GET STATUS
3029 MVA TURESUL,R2 SETUP ADDR OF TU RESULTS BUFF IN R2
3030 HWV RCDNO,WRDCB+2 LOAD STARTING RECORD# IN WRITE DCB
3031 MWV SKDCB+4,WRDCB+4 LOAD HEAD/CYLINDER#S IN WRITE DCB
3032 HWV SKDCB+4,VRDCB+4 LOAD HEAD/CYLINDER#S IN VERIFY DCB
3033 BAL \$WRTO,R6 WRITE 5 RECORDS OF DATA
3034 DC A(\$ERR\$) ABORT TEST IF ERROR
3035 TBTR (R4,ER) WAS THERE AN INTERRUPT ERROR?
3036 JOFF FXHD2 YES - ABORT TEST
3037 TBT (R2,0) SET WRITE ERROR
3038 J X7A17A GET STATUS
3039 MWV WRDCB+2,VRDCB+2 LOAD RECORD# IN RD VERIFY DCB
3040 BAL \$RDVY,R6 VERIFY 5 RECORDS OF DATA
3041 DC A(\$ERR\$) ABORT TEST IF ERROR
3042 TBTR (R4,ER) WAS THERE AN INTERRUPT ERROR?
3043 JOFF FXHD3 YES - ABORT TEST
3044 TBT (R2,1) SET READ VERIFY ERROR
3045 J X7A17A GET STATUS
3046 FXHD3 AWI X'0400',SKDCB+4 INCREMENT FIXED HEAD #
3047 SWI 1,HDCNT1 HAVE ALL FIXED HEADS BEEN TESTED?
3048 JP FXHD NO - GO WRITE ON NEXT FXD HD TRACK
3049 X7A17A BAL X'IOCS,R6 GO READ STATUS
3050 DC A(\$ERR\$) ABORT TEST IF ERROR
3051 TWI X'0008',CSTL5 WAS THERE A CYCLE STEAL STAUUS ERROR?
3052 BON \$ERR\$ YES - ABORT TEST
3053 TWI X'0001',CSTL5 INTERFACE ERROR?
3054 JON PCLER YES - CHECK FOR PARITY ERROR
3055 THJ X'0080',CSTL6 PARITY ERROR/
3056 HWV PRTYI TURESUL+2 YES - SET PARITY ERROR BIT ON
3057 HVD CSTL5,TURESUL+2 SAVE CSS WORDS 4, 5, 12, AND 13
3058 MVD CST12,TURESUL+6 \*STN TURESULS BUFFER
3059 HVD SCTID,TURESUL+10 SAVE SECTOR ID IN TU RESULTS BUFFER
3060 TXIT
3061+ B \$CONX RETURN TO MDI CONTROLLER

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
003BA0 4A41 3062+ \*\*\*\*\*
003BA2 50F3 3063 PRTYI TBTS (R2,1) BUS PARITY ERROR
003BA4 4A42 3064 J X7A17 SETUP STATUS IN TU RESULTS BUFFER
003BA6 4025 2A9C 0020 3065 PCLER TBTS (R2,2) INTERFACE ERROR
003BAC 12F9 3067 TWI X'0020',CST13 BUS PARITY CHECK?
003BAE 50ED 3068 JON PRTYI YES - SET PARITY ERROR BIT ON
3069 J X7A17 SETUP STATUS IN TU RESULTS BUFFER
3070 COPY T7A54 11SEP78
3071 T7A54 TUIT
3072+\*\*\*\*\*06FEB76\*\*
3073\*\* TEST UNIT
3074\*\*
3075\*\* \*\*\*\*\*
3076\*\*
3077\*\* PURPOSE
3078\*\*
3079\*\*
3080\*\* CALLING SEQUENCE
3081\*\*
3082\*\* TEST UNIT
3083\*\*
3084\*\* RETURN CONTROL
3085\*\*
3086\*\* B TURTN\* RETURN TO MDI SUPERVISOR
3087\*\*
3088\*\*\*\*\*
3089 T7A54 MWV R7,TURTN SAVE RETURN ADDRESS
3090 HWVI X'7A54',STUID SAVE TU ID FOR DISPLAY
3091+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
3092+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
3093+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
3094\*\*
3095\*\* PURPOSE
3096\*\*
3097\*\* TO VERIFY THE SCAN FUNCTION
3098\*\*
3099\*\* CALLING SEQUENCE
3100\*\*
3101\*\* MDI=\$TUXX,T7A54,01,10,EQ'
3102\*\*
3103\*\* TURESULS BIT(S) 3.....SCAN ERROR
3104\*\*
3105\*\* RETURN CONTROL
3106\*\*
3107\*\* B TURTN\* RETURN TO MDI SUPERVISOR
3108\*\*
3109\*\*\*\*\*
3110 MWVZ SKDCB,R0 SEEK CNTL WD - CHAINING
3111 HWVI 359,SKDCB+4 SETUP CYLINDER # 359 TO SEEK TO
3112 HWV MHDS,HDCNT GET NUMBER OF MOVEABLE HEADS
3113 JNEV RT702 SELECT HEAD 0 IF NO FIXED HEADS
3114 RT701 BAL X'0400',SKDCB+4 SELECT HEAD 1 IF FIXED HEADS
3115 RT702 BAL \$SECK,R6 SET TO CYL #359 AND READ SECTOR ID
3116 DC A(\$ERR\$) RETRY ADDRESS
3117 BAL TWOSC,R6 FIND FIVE GOOD CONS SECTORS
3118 MWV RCDNO+1,SCDCB+3 LOAD STARTING RECORD NUMBER
3119 MWV SKDCB+4,SCDCB+4 LOAD HEAD AND CYLINDER NUMBERS
3120 MWVI 258,SCDCB+12 SET BYTE CNT EQUAL TO 258
3121 MVA SCBUF,SCDCB+14 LOAD ADDRESS OF SCAN ARG BUFFER
3122 MVDZ \$DATA,R0 INITIALIZE WRITE BUFFER
3123 BAL \$WBUFF,R6 \*
3124 HWV RCDNO+1,SCDCB+3 LOAD STARTING RECORD NUMBER
3125 HWV SKDCB+4,SCDCB+4 LOAD HEAD AND CYLINDER NUMBERS
3126 MWVI 258,SCDCB+12 SET BYTE CNT EQUAL TO 258
3127 MVA SCBUF,SCDCB+14 LOAD ADDRESS OF SCAN ARG BUFFER
3128 BAL INSCN,R6 SET SCAN BUFFER TO ALL ONES
3129 HWV WRBUF+255,SCBUF+255 SETUP SCAN ARG TO SCAN 1ST DATA REC
3130 HWV WRBUF,SCBUF \*
3131 MWVI X'FOFF',SCBUF+2 \*
3132 HWVI 20,R7 \*
3133 MVA SCBUF+80,R5 \*
3134 MVA WRBUF+336,R3 \*
3135 HWVFN (R3),(P5) \*
3136 TBTR (R4,B59) RESET SCAN NOT HIT BIT
3137 TBTS (R4,B60) SET SCAN EQUAL HIT BIT
3138 HWVZ SCDCB+6,R0 SETUP SCAN DCB TO SCAN 1ST REC ONLY
3139 MVA WRBUF+256,DELIM SETUP EXPT DELIM HIT ADDR
3140 MVA SCBUF,RECRD GET ADDR OF RECORD WHERE HIT EXPT (1)
3141 BAL SCNEQ,R6 SCAN EQUAL (HIT EXPT ON 256TH BYTE)
3142 TXIT RETURN TO MDI
3143+ B \$CONX RETURN TO MDI CONTROLLER
3144\*\*\*\*\*
3145 \*
3146 SCNEQ MWVI X'2038',SCDCB SCAN EQUAL CNTL WD
3147 HWV R6,XSCAN+2 SAVE RETURN ADDRESS
3148 MVA SCBUF,R3 ADDRESS OF SCAN ARG RECORD
3149 MVA WRBUF,R5 ADDRESS OF EXPT RETURN ARG RECORD
3150 HWVI 258,R7 NO. OF BYTES TO MOVE
3151 HWVFN (R4,B5) SET UP EXPECTED RETURN SCAN ARG
3152 TBT (R4,B59) IS A HIT EXPT?
3153 JON NREC NO - DO NOT MODIFY SCAN ARG RECORD
3154 MWVI X'FFFF',WRBUF+256 MODIFY EXPDA BUF IF HIT ON 256TH BYTE
3155 HWV DELIM,R1 ATTCH WILL STORE DATA AT 'DELIM+2'
3156 AWI 2,R1 \* IF HIT AND HIT NOT ON 256TH BYTE
3157 SW R1,R3 NO. OF RECORD BYTES EXP TO BE RETURN
3158 HWV R3,R7 SET UP BYTE CNT FOR MOVE OPERATION
3159 HWV RECRD,R2 GET ADDR OF RECORD WHERE DATA WILL
3160 AWI 255,R2 \* BE RETURNED AND POINT TO LAST BYTE
3161 HWV R5,DELIM+2 ADJUST ADDR TO LAST BYTE OF EXPT BUF
3162 HWVFN (R4,B5) SETUP EXPT MODIFIED SCAN ARG RECORD
3163 NREC BAL \$SCAN,R6 GO SCAN RECORD (S)
3164 DC A(\$ERR\$) RETRY ADDRESS
3165 HWVI 0,R2 SET SCAN SUMMARY BITS AS EXPT IN IIB
3166 TBT (R4,B59) SCAN HIT EXPECTED?
3167 JOFF EOHIT YES - CHECK FOR SCAN EQL HIT EXPT
3168 HWVI X'40',R2 SET EXPT SCAN STATUS FOR NO HIT
3169 J KSCSN CHECK SCAN STATUS IN IIB FOR NO HIT
3170 EQHIT TBT (R4,B60) SCAN EQUAL HIT EXPECTED?
3171 HWV KSCSN NO - CHECK FOR LOW/HIGH HIT
3172 HWVI X'20',R2 YES - SET EXPT STATUS FOR EQL HIT
3173 CKSCN HWB \$ISB,R1 SAVE IIB SCAN STATUS
3174 C224 2A68 \$ISB,R2 SCAN STATUS IN IIB AS EXPECTED?
3175 JNE SCNEQ NO - GO RETURN ERROR RESULTS

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
003CB6	402B 3520 FF00	3176	TWI X'FF00',SCBUF+256	TEST THE LAST TWO BYTES FOR
003CBC	1203	3177	JON XSCAN	* 'PP' IF CORRECT RETURN OK
003CBE	4020 18C8 1000	3178	SCNER MVWI X'1000',TURESUL	SET SCAN ERROR BIT
003CC4	6802 0000	3179	XSCAN B *-*	RETURN
003CC8	4020 2DD8 3CEA	3181	\$SCAN MVA SCDCB,IODCB	SET DCB ADDRESS
003CCE	6802 2CC6	3182	B XIO	
003CD2	4724 0100	3184	INSCN MVWI 256,R7	INITIALIZE 1ST 256 BYTES OF SCAN
003CD6	4324 3420	3185	MVA SCBUF,R3	* ARGUMENT RECORD BUFFER TO
003CDA	0DFD	3186	NVBI X'FF',R5	* ALL ONE'S
003CDC	2D6C	3187	FFN R5,(R3)	
003CDE	4020 3520 0000	3188	MVWI 0,SCBUF+256	SET LAST TWO BYTES OF SCAN REC TO 0'S
003CE4	5600	3189	BXS (R6)	RETURN TO CALLER
003CE6	0000	3191	DELIM DC A(*-*)	SCAN HIT EXPT DELIMITER
003CE8	0000	3192	RECRD DC A(*-*)	ADDR OF EXPTECTED RECORD DATA
		3193	*	
		3194	***** SCAN DCB (2038-EQUAL, 2039-LOW/EQUAL, 203A-HIGH/EQUAL) ***	
		3195	*	
003CEA	0000	3196	SCDCB DC A(*-*)	SCAN CONTROL WORD
003CEC	0000	3197	DC A(*-*)	FLAG / RECORD #
003CEE	0000	3198	DC A(*-*)	HEAD / CYLINDER #
003CF0	0000	3199	DC A(*-*)	SCAN/REPEAT COUNT
003CF2	2B90	3200	DC A(RSBA)	RSB ADDRESS
003CF4	0000	3201	DC A(*-*)	CHAIN ADDRESS
003CF6	0102	3202	DC X'258'	BYTE COUNT
003CF8	3420	3203	DC A(SCBUF)	SCAN DATA BUFFER
		3204	*	
		3205	*****	
003CFA	0000000000000000	3206	PATCH DC 10A(*-*)	PATCH AREA
003420		3207	SCBUF EQU RDBUF	SCAN ARGUMENT BUFFER
000000		3208	END	

DECLARED	NAME	CROSS-REFERENCE LISTING	COPYRIGHT IBM CORP 1976
		ATTRIBUTES AND REFERENCES	
2338	\$CONC	ADDRESS. HEX LOCATION(00002DE8) IN CSECT(I7A40 ) LENGTH(2)	
2407	\$CONX	2476 2577 2929 3006 3092 ADDRESS. HEX LOCATION(00002E7E) IN CSECT(I7A40 ) LENGTH(1)	
1043	\$DATA	2534 2641 2963 3061 3143 ADDRESS. HEX LOCATION(00002AA0) IN CSECT(I7A40 ) LENGTH(2)	
2380	\$ERR\$	2721 2727 2733 2740 2741 2742 2744 2746 2748 2760 3122 ADDRESS. HEX LOCATION(00002E1C) IN CSECT(I7A40 ) LENGTH(6)	
		2477 2483 2491 2500 2516 2523 2526 2578 2597 2499 2610 2617 2630 2642 2672 2674 2693 2707 2817 2930 2934 2939 2942 2946 2950 2953 3007 3023 3025 3034 3041 3050 3052 3093 3116 3164	
1044	\$INTL	ADDRESS. HEX LOCATION(00002AA4) IN CSECT(I7A40 ) LENGTH(2)	
1009	\$IOIN	2255 2347 ADDRESS. HEX LOCATION(00002A66) IN CSECT(I7A40 ) LENGTH(2)	
1010	\$ISB	1444 2109 2169 2249 2286 2349 ADDRESS. HEX LOCATION(00002A68) IN CSECT(I7A40 ) LENGTH(2)	
994	\$LE	1445 2110 2250 2291 2350 3173 3174 ABSOLUTE. HEX VALUE(00000026)	
1404	\$RD	2115 2257 ADDRESS. HEX LOCATION(00002BFE) IN CSECT(I7A40 ) LENGTH(2)	
1389	\$RDID	2522 ADDRESS. HEX LOCATION(00002BD0) IN CSECT(I7A40 ) LENGTH(6)	
1411	\$RDVY	2499 2791 ADDRESS. HEX LOCATION(00002C12) IN CSECT(I7A40 ) LENGTH(6)	
1386	\$RECL	2515 2616 3040 ADDRESS. HEX LOCATION(00002BC8) IN CSECT(I7A40 ) LENGTH(6)	
3181	\$SCAN	2482 ADDRESS. HEX LOCATION(00003CC8) IN CSECT(I7A40 ) LENGTH(6)	
1383	\$SEK	3163 ADDRESS. HEX LOCATION(00002BC0) IN CSECT(I7A40 ) LENGTH(6)	
1008	\$TUID	2490 2596 3022 3115 ADDRESS. HEX LOCATION(00002A64) IN CSECT(I7A40 ) LENGTH(2)	
2718	\$WBUF	1054 2404 2442 2474 2575 2927 3004 3090 ADDRESS. HEX LOCATION(00003248) IN CSECT(I7A40 ) LENGTH(1)	
1414	\$WRT	2580 3013 3123 ADDRESS. HEX LOCATION(00002C1A) IN CSECT(I7A40 ) LENGTH(6)	
1436	\$WRT0	2609 3033 ADDRESS. HEX LOCATION(00002C60) IN CSECT(I7A40 ) LENGTH(4)	
1457	\$WRT1	2938 2945 2949 ADDRESS. HEX LOCATION(00002CA0) IN CSECT(I7A40 ) LENGTH(2)	
42	@CALL	1454 ABSOLUTE. HEX VALUE(00000201)	
102	@DCADD1	518 568 600 680 730 762 809 827 848 ADDRESS. HEX LOCATION(000019B8) IN CSECT(I7A40 ) LENGTH(1)	
103	@DCADD2	2401 ADDRESS. HEX LOCATION(000019BA) IN CSECT(I7A40 ) LENGTH(1)	
39	@FIXT	2402 ABSOLUTE. HEX VALUE(00000101)	
41	@GOTO	606 621 768 833 854 ABSOLUTE. HEX VALUE(00000200)	
46	@NVL	474 536 636 698 ABSOLUTE. HEX VALUE(00000600)	
38	@QUES	516 566 598 678 728 760 783 ABSOLUTE. HEX VALUE(00000100)	
45	@TUX	471 ABSOLUTE. HEX VALUE(00000500)	
		480 482 504 524 542 554 574 586 609 624 642 654 666 686 704 716 736 748 771 785 797 815 836	
2412	BEGIN	ADDRESS. HEX LOCATION(00002E88) IN CSECT(I7A40 ) LENGTH(2)	
2437	BIT0080	2433 ABSOLUTE. HEX VALUE(00000080)	
2432	BUFPT	2403 ADDRESS. HEX LOCATION(00002FE4) IN CSECT(I7A40 ) LENGTH(2)	
957	B48	2388 ABSOLUTE. HEX VALUE(00000010)	
968	B59	2736 ABSOLUTE. HEX VALUE(0000001B)	
969	B60	3136 3152 3166 ABSOLUTE. HEX VALUE(0000001C)	
2882	CDAT	3137 3170 ADDRESS. HEX LOCATION(000033F0) IN CSECT(I7A40 ) LENGTH(2)	
		2719 2722 2728 2742 2744 2746 2748 2750 2752 2754 2758	
998	CE	2094 2208 2278 ABSOLUTE. HEX VALUE(0000002A)	
2696	CFGER	ADDRESS. HEX LOCATION(00003244) IN CSECT(I7A40 ) LENGTH(4)	
2486	CHK1	2678 2682 ADDRESS. HEX LOCATION(0000301A) IN CSECT(I7A40 ) LENGTH(6)	
2494	CHK2	2481 ADDRESS. HEX LOCATION(00003036) IN CSECT(I7A40 ) LENGTH(6)	
2510	CHK3	2487 ADDRESS. HEX LOCATION(00003078) IN CSECT(I7A40 ) LENGTH(6)	
2519	CHK4	2495 ADDRESS. HEX LOCATION(00003098) IN CSECT(I7A40 ) LENGTH(6)	
1083	CICB	2511 ABSOLUTE. HEX VALUE(00000014)	
3173	CKSCN	2344 ADDRESS. HEX LOCATION(00003CAC) IN CSECT(I7A40 ) LENGTH(4)	
1180	CLDCB	3169 3171 ADDRESS. HEX LOCATION(00002AC6) IN CSECT(I7A40 ) LENGTH(2)	
2722	CLOP	1386 ADDRESS. HEX LOCATION(00003256) IN CSECT(I7A40 ) LENGTH(4)	
2728	CLOP1	2725 ADDRESS. HEX LOCATION(0000326A) IN CSECT(I7A40 ) LENGTH(4)	
2694	CNFGX	2731 ADDRESS. HEX LOCATION(00003240) IN CSECT(I7A40 ) LENGTH(4)	
2670	CNFIG	2670 2685 2687 2690 ADDRESS. HEX LOCATION(000031F0) IN CSECT(I7A40 ) LENGTH(4)	
2879	CNVTX	2592 ADDRESS. HEX LOCATION(000033E8) IN CSECT(I7A40 ) LENGTH(4)	
2854	CONVT	2857 2859 2869 2877 ADDRESS. HEX LOCATION(00003392) IN CSECT(I7A40 ) LENGTH(1)	
996	CS	2788 ABSOLUTE. HEX VALUE(00000028)	
997	CSA	2095 2098 2206 2247 2276 ABSOLUTE. HEX VALUE(00000029)	
1027	CSBUF	2281 ADDRESS. HEX LOCATION(00002A84) IN CSECT(I7A40 ) LENGTH(1)	
		1225 1438 2106	

## CROSS-REFERENCE LISTING

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1218	CSDCB	ADDRESS. HEX LOCATION(00002B06) IN CSECT(I7A40 ) LENGTH(2)
1032	CSTL5	ADDRESS. HEX LOCATION(00002A8C) IN CSECT(I7A40 ) LENGTH(2) 2531 2631 2633 2637 2673 2675 2936 3051 3053
1033	CSTL6	ADDRESS. HEX LOCATION(00002A8E) IN CSECT(I7A40 ) LENGTH(2) 2529 2635 2935 3055
1039	CST12	ADDRESS. HEX LOCATION(00002A9A) IN CSECT(I7A40 ) LENGTH(2) 2532 2638 2943 2954 3058
1040	CST13	ADDRESS. HEX LOCATION(00002A9C) IN CSECT(I7A40 ) LENGTH(2) 2646 3066
1309	CTR03	ADDRESS. HEX LOCATION(00002B9E) IN CSECT(I7A40 ) LENGTH(2) 2787 2812 2818
2875	CVT1	ADDRESS. HEX LOCATION(000033D4) IN CSECT(I7A40 ) LENGTH(6) 2872
2874	CVT2	ADDRESS. HEX LOCATION(000033CE) IN CSECT(I7A40 ) LENGTH(6) 2871
1017	DCBUF	ADDRESS. HEX LOCATION(00002A74) IN CSECT(I7A40 ) LENGTH(1) 1441 2101
2433	DC2PT	ADDRESS. HEX LOCATION(00002FE6) IN CSECT(I7A40 ) LENGTH(2) 2402
3191	DELIM	ADDRESS. HEX LOCATION(00003CE6) IN CSECT(I7A40 ) LENGTH(2) 3139 3155
105	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I7A40 ) LENGTH(1) 1047 2299 2308 2408
1012	DEV1	ADDRESS. HEX LOCATION(00002A6C) IN CSECT(I7A40 ) LENGTH(2) 1016 2340
1015	DEV4	ADDRESS. HEX LOCATION(00002A72) IN CSECT(I7A40 ) LENGTH(2) 2209 2210
1169	DGDCB	ADDRESS. HEX LOCATION(00002AB6) IN CSECT(I7A40 ) LENGTH(2) 1433
67	DUMMY	ABSOLUTE. HEX VALUE(00000000) 462 856 871
857	ENTPT	ADDRESS. HEX LOCATION(0000285E) IN CSECT(I7A40 ) LENGTH(1) 198
47	EQ	ABSOLUTE. HEX VALUE(00000000) 483 507 557 589 645 669 719 751 774
3170	EQHIT	ADDRESS. HEX LOCATION(00003CA6) IN CSECT(I7A40 ) LENGTH(2) 3167
989	ER	ABSOLUTE. HEX VALUE(00000021) 1447 2112 2133 2216 2258 2283 2598 2611 2618 2793 2940 2947 2951 3024 3035 3042
1069	EXIT	ABSOLUTE. HEX VALUE(00000006) 2265
2435	FAKETU	ADDRESS. HEX LOCATION(00002FEA) IN CSECT(I7A40 ) LENGTH(2) 2401
3022	FXHD	ADDRESS. HEX LOCATION(00003B10) IN CSECT(I7A40 ) LENGTH(4) 3048
3039	FXHD2	ADDRESS. HEX LOCATION(00003E48) IN CSECT(I7A40 ) LENGTH(6) 3036
3046	FXHD3	ADDRESS. HEX LOCATION(00003B5C) IN CSECT(I7A40 ) LENGTH(6) 3043
937	F00074	ADDRESS. HEX LOCATION(000029EC) IN CSECT(I7A40 ) LENGTH(1) 810 828 849
879	F00097	ADDRESS. HEX LOCATION(00002868) IN CSECT(I7A40 ) LENGTH(1) 475
887	F00109	ADDRESS. HEX LOCATION(000028A8) IN CSECT(I7A40 ) LENGTH(1) 519
891	F00114	ADDRESS. HEX LOCATION(000028C2) IN CSECT(I7A40 ) LENGTH(1) 537
895	F00123	ADDRESS. HEX LOCATION(000028D0) IN CSECT(I7A40 ) LENGTH(1) 569
899	F00134	ADDRESS. HEX LOCATION(000028EA) IN CSECT(I7A40 ) LENGTH(1) 601
903	F00137	ADDRESS. HEX LOCATION(00002904) IN CSECT(I7A40 ) LENGTH(1) 607
907	F00142	ADDRESS. HEX LOCATION(00002926) IN CSECT(I7A40 ) LENGTH(1) 622
913	F00148	ADDRESS. HEX LOCATION(00002956) IN CSECT(I7A40 ) LENGTH(1) 637
917	F00160	ADDRESS. HEX LOCATION(0000296E) IN CSECT(I7A40 ) LENGTH(1) 681
921	F00165	ADDRESS. HEX LOCATION(00002988) IN CSECT(I7A40 ) LENGTH(1) 699
925	F00174	ADDRESS. HEX LOCATION(00002996) IN CSECT(I7A40 ) LENGTH(1) 731
929	F00185	ADDRESS. HEX LOCATION(000029B0) IN CSECT(I7A40 ) LENGTH(1) 763
933	F00188	ADDRESS. HEX LOCATION(000029CA) IN CSECT(I7A40 ) LENGTH(1) 769
947	F00232	ADDRESS. HEX LOCATION(00002A40) IN CSECT(I7A40 ) LENGTH(1) 855
943	F00234	ADDRESS. HEX LOCATION(00002A22) IN CSECT(I7A40 ) LENGTH(1) 834
2693	F29MB	ADDRESS. HEX LOCATION(0000323A) IN CSECT(I7A40 ) LENGTH(6) 2691
2754	GOON	ADDRESS. HEX LOCATION(000032CA) IN CSECT(I7A40 ) LENGTH(6) 2751
2883	HDCNT	ADDRESS. HEX LOCATION(000033F2) IN CSECT(I7A40 ) LENGTH(2) 2593 2626 3021 3047 3112
2867	HD1	ADDRESS. HEX LOCATION(000033BA) IN CSECT(I7A40 ) LENGTH(4) 2865
2868	HD2	ADDRESS. HEX LOCATION(000033BE) IN CSECT(I7A40 ) LENGTH(2) 2863
2441	HEBLK	ADDRESS. HEX LOCATION(00002FEC) IN CSECT(I7A40 ) LENGTH(2) 2381
1089	HTOE	ABSOLUTE. HEX VALUE(0000001A) 2382
2825	IDER	ADDRESS. HEX LOCATION(0000338A) IN CSECT(I7A40 ) LENGTH(4) 2794 2808 2810
1065	IDLE	ABSOLUTE. HEX VALUE(00000002) 2127 2129
1310	ID00	ADDRESS. HEX LOCATION(00002BA0) IN CSECT(I7A40 ) LENGTH(2) 1291 1399
991	IN	ABSOLUTE. HEX VALUE(00000023) 1446 2113 2125 2246
2758	INCR	ADDRESS. HEX LOCATION(000032D8) IN CSECT(I7A40 ) LENGTH(6) 2743 2745 2747 2749
2741	INCR1	ADDRESS. HEX LOCATION(00003296) IN CSECT(I7A40 ) LENGTH(4) 2759
3184	INSCN	ADDRESS. HEX LOCATION(00003CD2) IN CSECT(I7A40 ) LENGTH(4)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
2308	INTBL	ADDRESS. HEX LOCATION(00002DE0) IN CSECT(I7A40 ) LENGTH(2) 2343
2203	INTER	ADDRESS. HEX LOCATION(00002D44) IN CSECT(I7A40 ) LENGTH(2) 2310
2212	INTES	ADDRESS. HEX LOCATION(00002D5C) IN CSECT(I7A40 ) LENGTH(2) 2207
2216	INTET	ADDRESS. HEX LOCATION(00002D64) IN CSECT(I7A40 ) LENGTH(2) 2213
2243	INTOK	ADDRESS. HEX LOCATION(00002D68) IN CSECT(I7A40 ) LENGTH(2) 2309
63	INTRNL	ABSOLUTE. HEX VALUE(00000000) 478 640
2265	INTRX	ADDRESS. HEX LOCATION(00002D98) IN CSECT(I7A40 ) LENGTH(2) 2260 2263
2246	INTR1	ADDRESS. HEX LOCATION(00002D70) IN CSECT(I7A40 ) LENGTH(2) 2211 2215 2217
2251	INTR2	ADDRESS. HEX LOCATION(00002D7E) IN CSECT(I7A40 ) LENGTH(1) 2248
2259	INTR3	ADDRESS. HEX LOCATION(00002D8C) IN CSECT(I7A40 ) LENGTH(2) 2256
2299	IOBLK	ADDRESS. HEX LOCATION(00002DD4) IN CSECT(I7A40 ) LENGTH(2) 1449 2114 2348
2301	IODCB	ADDRESS. HEX LOCATION(00002DD8) IN CSECT(I7A40 ) LENGTH(2) 1383 1386 1389 1397 1408 1411 1414 1417 1425 1429 1433 1460 1463 2096 2102 2347 3181
2302	IOMOD	ADDRESS. HEX LOCATION(00002DDA) IN CSECT(I7A40 ) LENGTH(2) 1450 1451 2088 2091 2097 2937 2944 2948
37	I7A40	CSECT. START(00002500) LENGTH(6158) ESDID(1) 37
1299	LGSEC	ADDRESS. HEX LOCATION(00002B80) IN CSECT(I7A40 ) LENGTH(2) 2786 2797 2814 2815 2821 2822 2855 2858
2418	LINE1	ADDRESS. HEX LOCATION(00002EC0) IN CSECT(I7A40 ) LENGTH(40) 2389
1011	LSTIO	ADDRESS. HEX LOCATION(00002A6A) IN CSECT(I7A40 ) LENGTH(2) 1436 2100 2351
988	MI	ABSOLUTE. HEX VALUE(00000020) 2261
2392	MVBUP	ADDRESS. HEX LOCATION(00002E4C) IN CSECT(I7A40 ) LENGTH(2) 2396 2399
2884	MVHDS	ADDRESS. HEX LOCATION(000033F4) IN CSECT(I7A40 ) LENGTH(2) 2593 2683 2686 2688 2692 2693 3112
2805	NDSPL	ADDRESS. HEX LOCATION(0000333C) IN CSECT(I7A40 ) LENGTH(2) 2799 2801 2803
2688	NFXH	ADDRESS. HEX LOCATION(00003228) IN CSECT(I7A40 ) LENGTH(6) 2680
1000	NG	ABSOLUTE. HEX VALUE(0000002C) 2264
995	NI	ABSOLUTE. HEX VALUE(00000027) 2119
3163	NREC	ADDRESS. HEX LOCATION(00003C96) IN CSECT(I7A40 ) LENGTH(4) 3153
2605	NXHD1	ADDRESS. HEX LOCATION(00003158) IN CSECT(I7A40 ) LENGTH(4) 2602 2625
2615	NXHD2	ADDRESS. HEX LOCATION(0000317C) IN CSECT(I7A40 ) LENGTH(6) 2612
2622	NXHD3	ADDRESS. HEX LOCATION(00003190) IN CSECT(I7A40 ) LENGTH(6) 2619
2626	NXHD4	ADDRESS. HEX LOCATION(000031A0) IN CSECT(I7A40 ) LENGTH(6) 2623
2595	NXTHD	ADDRESS. HEX LOCATION(0000313A) IN CSECT(I7A40 ) LENGTH(6) 2594 2627
471	N00001	ADDRESS. HEX LOCATION(000025C8) IN CSECT(I7A40 ) LENGTH(2) 315 867
474	N00002	ADDRESS. HEX LOCATION(000025CC) IN CSECT(I7A40 ) LENGTH(2) 318
480	N00003	ADDRESS. HEX LOCATION(000025D8) IN CSECT(I7A40 ) LENGTH(2) 321 472
492	N00004	ADDRESS. HEX LOCATION(000025EA) IN CSECT(I7A40 ) LENGTH(2) 324
504	N00005	ADDRESS. HEX LOCATION(000025FC) IN CSECT(I7A40 ) LENGTH(2) 327
516	N00006	ADDRESS. HEX LOCATION(0000260E) IN CSECT(I7A40 ) LENGTH(2) 330
518	N00007	ADDRESS. HEX LOCATION(00002610) IN CSECT(I7A40 ) LENGTH(2) 333 505
524	N00008	ADDRESS. HEX LOCATION(0000261C) IN CSECT(I7A40 ) LENGTH(2) 336 493
536	N00009	ADDRESS. HEX LOCATION(0000262E) IN CSECT(I7A40 ) LENGTH(2) 339
542	N00010	ADDRESS. HEX LOCATION(0000263A) IN CSECT(I7A40 ) LENGTH(2) 342 525
554	N00011	ADDRESS. HEX LOCATION(0000264C) IN CSECT(I7A40 ) LENGTH(2) 345
566	N00012	ADDRESS. HEX LOCATION(0000265E) IN CSECT(I7A40 ) LENGTH(2) 348
568	N00013	ADDRESS. HEX LOCATION(00002660) IN CSECT(I7A40 ) LENGTH(2) 351 555
574	N00014	ADDRESS. HEX LOCATION(0000266C) IN CSECT(I7A40 ) LENGTH(2) 354 543
586	N00015	ADDRESS. HEX LOCATION(0000267E) IN CSECT(I7A40 ) LENGTH(2) 357
598	N00016	ADDRESS. HEX LOCATION(00002690) IN CSECT(I7A40 ) LENGTH(2) 360
600	N00017	ADDRESS. HEX LOCATION(00002692) IN CSECT(I7A40 ) LENGTH(2) 363 587
606	N00018	ADDRESS. HEX LOCATION(0000269E) IN CSECT(I7A40 ) LENGTH(2) 366 575
609	N00019	ADDRESS. HEX LOCATION(000026A2) IN CSECT(I7A40 ) LENGTH(2) 369 481
621	N00020	ADDRESS. HEX LOCATION(000026B4) IN CSECT(I7A40 ) LENGTH(2) 372
624	N00021	ADDRESS. HEX LOCATION(000026B8) IN CSECT(I7A40 ) LENGTH(2) 375 610
636	N00022	ADDRESS. HEX LOCATION(000026CC) IN CSECT(I7A40 ) LENGTH(2) 378
642	N00023	ADDRESS. HEX LOCATION(000026D8) IN CSECT(I7A40 ) LENGTH(2) 381 625
654	N00024	ADDRESS. HEX LOCATION(000026EA) IN CSECT(I7A40 ) LENGTH(2) 384
666	N00025	ADDRESS. HEX LOCATION(000026FC) IN CSECT(I7A40 ) LENGTH(2)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
678	N00026	387 ADDRESS. HEX LOCATION(0000270E) IN CSECT(I7A40 ) LENGTH(2)
680	N00027	390 ADDRESS. HEX LOCATION(00002710) IN CSECT(I7A40 ) LENGTH(2)
686	N00028	393 667 ADDRESS. HEX LOCATION(0000271C) IN CSECT(I7A40 ) LENGTH(2)
698	N00029	396 655 ADDRESS. HEX LOCATION(0000272E) IN CSECT(I7A40 ) LENGTH(2)
704	N00030	399 ADDRESS. HEX LOCATION(0000273A) IN CSECT(I7A40 ) LENGTH(2)
716	N00031	402 687 ADDRESS. HEX LOCATION(0000274C) IN CSECT(I7A40 ) LENGTH(2)
728	N00032	405 ADDRESS. HEX LOCATION(0000275E) IN CSECT(I7A40 ) LENGTH(2)
730	N00033	408 ADDRESS. HEX LOCATION(00002760) IN CSECT(I7A40 ) LENGTH(2)
736	N00034	411 717 ADDRESS. HEX LOCATION(0000276C) IN CSECT(I7A40 ) LENGTH(2)
748	N00035	414 705 ADDRESS. HEX LOCATION(0000277E) IN CSECT(I7A40 ) LENGTH(2)
760	N00036	417 ADDRESS. HEX LOCATION(00002790) IN CSECT(I7A40 ) LENGTH(2)
762	N00037	420 ADDRESS. HEX LOCATION(00002792) IN CSECT(I7A40 ) LENGTH(2)
768	N00038	423 749 ADDRESS. HEX LOCATION(0000279E) IN CSECT(I7A40 ) LENGTH(2)
771	N00039	426 737 ADDRESS. HEX LOCATION(000027A2) IN CSECT(I7A40 ) LENGTH(2)
783	N00040	429 643 870 ADDRESS. HEX LOCATION(000027B6) IN CSECT(I7A40 ) LENGTH(2)
785	N00041	432 ADDRESS. HEX LOCATION(000027B8) IN CSECT(I7A40 ) LENGTH(2)
797	N00042	435 772 ADDRESS. HEX LOCATION(000027D6) IN CSECT(I7A40 ) LENGTH(2)
809	N00043	438 ADDRESS. HEX LOCATION(000027F4) IN CSECT(I7A40 ) LENGTH(2)
815	N00044	441 ADDRESS. HEX LOCATION(00002800) IN CSECT(I7A40 ) LENGTH(2)
827	N00045	444 798 ADDRESS. HEX LOCATION(0000281E) IN CSECT(I7A40 ) LENGTH(2)
833	N00046	447 ADDRESS. HEX LOCATION(0000282A) IN CSECT(I7A40 ) LENGTH(2)
836	N00047	450 816 ADDRESS. HEX LOCATION(0000282E) IN CSECT(I7A40 ) LENGTH(2)
848	N00048	453 786 ADDRESS. HEX LOCATION(0000284C) IN CSECT(I7A40 ) LENGTH(2)
854	N00049	456 ADDRESS. HEX LOCATION(00002858) IN CSECT(I7A40 ) LENGTH(2)
58	OF	459 837 ABSOLUTE. HEX VALUE(0000202) 495 527 545 577 612 657 689 707 739
57	ON	462 788 800 ABSOLUTE. HEX VALUE(00000200)
953	OPTN1	2205 2245 2475 2576 2928 3005 3091 ADDRESS. HEX LOCATION(00002A5E) IN CSECT(I7A40 ) LENGTH(2)
976	OPTN3	2294 2342 ADDRESS. HEX LOCATION(00002A62) IN CSECT(I7A40 ) LENGTH(2)
2885	ORGID	2785 2819 ADDRESS. HEX LOCATION(000033F6) IN CSECT(I7A40 ) LENGTH(2)
101	PARMARA	490 502 514 534 552 564 584 596 634 652 664 676 696 714 726 746 758 ADDRESS. HEX LOCATION(0000196E) IN CSECT(I7A40 ) LENGTH(1)
2645	PCERR	781 795 807 825 846 ADDRESS. HEX LOCATION(000031E4) IN CSECT(I7A40 ) LENGTH(2)
3065	PCLER	2634 ADDRESS. HEX LOCATION(00003BA4) IN CSECT(I7A40 ) LENGTH(2)
1300	PHYSC	3054 ADDRESS. HEX LOCATION(00002B82) IN CSECT(I7A40 ) LENGTH(2)
69	PID	2790 2855 2873 2874 2875 2876 2878 ADDRESS. HEX LOCATION(00001800) IN CSECT(I7A40 ) LENGTH(1)
		71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106
2436	PIDMSG10	107 108 109 110 111 112 2400 ABSOLUTE. HEX VALUE(0000F1F0)
1075	PREP	2400 ABSOLUTE. HEX VALUE(0000000C)
2643	PRTY	2352 ADDRESS. HEX LOCATION(000031E0) IN CSECT(I7A40 ) LENGTH(2)
3063	PRTYY	2636 2647 ADDRESS. HEX LOCATION(00003BA0) IN CSECT(I7A40 ) LENGTH(2)
2886	RCDNO	3056 3067 ADDRESS. HEX LOCATION(0000341E) IN CSECT(I7A40 ) LENGTH(2)
2887	RDBUF	2606 2622 2624 2822 3030 3118 3124 ADDRESS. HEX LOCATION(00003420) IN CSECT(I7A40 ) LENGTH(2)
1251	RDDCB	3207 ADDRESS. HEX LOCATION(00002B36) IN CSECT(I7A40 ) LENGTH(2)
2499	RDDID	1405 1406 1408 1463 1464 1465 2519 2520 2521 ADDRESS. HEX LOCATION(00003050) IN CSECT(I7A40 ) LENGTH(4)
3192	RECRD	2506 ADDRESS. HEX LOCATION(00003CE8) IN CSECT(I7A40 ) LENGTH(2)
2881	RGBUF	3140 3159 ADDRESS. HEX LOCATION(000033EC) IN CSECT(I7A40 ) LENGTH(2)
1082	RICB	2521 2524 ABSOLUTE. HEX VALUE(00000013)
1273	RKDCB	2408 ADDRESS. HEX LOCATION(00002B56) IN CSECT(I7A40 ) LENGTH(2)
1284	RMDCB	1417 1422 ADDRESS. HEX LOCATION(00002B66) IN CSECT(I7A40 ) LENGTH(2)
1307	RSBA	1397 ADDRESS. HEX LOCATION(00002B90) IN CSECT(I7A40 ) LENGTH(2)
1196	RSDCB	1173 1189 1200 1211 1233 1244 1255 1266 1277 ADDRESS. HEX LOCATION(00002AE6) IN CSECT(I7A40 ) LENGTH(2)
2788	RT428	1288 3200 ADDRESS. HEX LOCATION(00003300) IN CSECT(I7A40 ) LENGTH(4)
2814	RT429	1389 1394 2496 2497 2498 2503 2504 2789 2816 ADDRESS. HEX LOCATION(0000335C) IN CSECT(I7A40 ) LENGTH(6)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
2818	RT430	2796 ADDRESS. HEX LOCATION(0000336E) IN CSECT(I7A40 ) LENGTH(6)
3115	RT702	3113 ADDRESS. HEX LOCATION(00003BDC) IN CSECT(I7A40 ) LENGTH(4)
0	R0	3111 REGISTER. HEX VALUE(00000000) 1450 1452 1453 2488 2514 2530 2580 2581 2582 2583 2590 2675 2676 2677 2679 2681 2684 2689 2721 2722 2727 2728 2797 2800 2802 2804 2805 2806 2807 2860 2861 2862 2864 2866 2867 2868 2870 2961 3009 3010 3011 3012 3019 3110 3122
0	R1	3138 REGISTER. HEX VALUE(00000001) 2389 2392 2395 2398 2720 2724 2726 2730 2738 2741 3155 3156 3157 3173
0	R2	REGISTER. HEX VALUE(00000002) 2394 2395 2601 2603 2605 2613 2620 2643 2645 2739 2785 2811 2818 2825 2826 3027 3029 3037 3044 3063 3065 3159 3160 3162 3165 3168 3172 3174
0	R3	REGISTER. HEX VALUE(00000003) 1336 1338 1390 1393 1400 1401 1404 1407 1418 1421 1437 1440 1443 1445 1466 1467 2088 2101 2104 2105 2108 2110 2167 2168 2169 2203 2204 2210 2214 2243 2244 2249 2262 2294 2339 2341 2342 2350 2387 2388 2392 2404 2735 2740 2760 3134 3135 3148 3151 3157 3158 3185 3187
0	R4	REGISTER. HEX VALUE(00000004) 1446 1447 1448 2093 2095 2098 2112 2113 2115 1116 1119 2125 2133 2205 2206 2208 2212 2216 2245 2246 2247 2257 2258 2259 2261 2264 2274 2276 2278 2281 2283 2475 2479 2576 2598 2611 2618 2736 2793 2928 2940 2947 2951 3005 3024 3035 3042 3091 3136 3137 3152 3166 3170
0	R5	REGISTER. HEX VALUE(00000005) 1337 1338 1391 1393 1399 1401 1405 1407 1419 1421 1438 1440 1441 1443 1465 1467 2102 2104 2106 2108 2124 2131 2253 2254 2255 2286 2287 2289 2291 2340 2341 2386 2399 3133 3135 3149
0	R6	REGISTER. HEX VALUE(00000006) 1339 1340 1436 2100 2120 2134 2170 2275 2280 2282 2290 2293 2295 2345 2351 2353 2391 2396 2397 2476 2482 2490 2499 2515 2522 2525 2577 2584 2592 2596 2600 2609 2616 2629 2670 2671 2757 2763 2784 2788 2791 2879 2929 2933 2938 2941 2945 2949 2952 3006 3013 3022 3026 3033 3040 3049 3092 3115 3117 3123 3128 3141 3147 3163 3189
0	R7	REGISTER. HEX VALUE(00000007) 1055 1335 1392 1398 1406 1420 1439 1442 1449 1464 2103 2107 2114 2209 2250 2338 2343 2348 2381 2390 2393 2405 2408 2473 2574 2734 2761 2926 3003 3089 3150 3158 3184
3207	SCBUF	3121 3127 3129 3130 3131 3133 3139 3148 3176 ADDRESS. HEX LOCATION(00003420) IN CSECT(I7A40 ) LENGTH(2)
3196	SCDCB	3118 3119 3120 3121 3124 3125 3126 3127 3138 ADDRESS. HEX LOCATION(00003CEA) IN CSECT(I7A40 ) LENGTH(2)
3146	SCNEQ	3146 3181 ADDRESS. HEX LOCATION(00003C5C) IN CSECT(I7A40 ) LENGTH(6)
3178	SCNER	3141 ADDRESS. HEX LOCATION(00003CBE) IN CSECT(I7A40 ) LENGTH(6)
1016	SCTID	3175 ADDRESS. HEX LOCATION(00002A6C) IN CSECT(I7A40 ) LENGTH(2)
1207	SKDCB	1207 1280 1336 1391 1394 1419 1422 2639 2795 2798 2807 2809 2811 3056 2501 2507 ADDRESS. HEX LOCATION(00002AF6) IN CSECT(I7A40 ) LENGTH(2)
2525	SNSTS	1383 2488 2489 2590 2591 2595 2607 2608 2789 2809 2856 2860 3019 3020 3031 3032 3046 3110 3111 3114 3119 3125 ADDRESS. HEX LOCATION(000030B6) IN CSECT(I7A40 ) LENGTH(4)
1073	START	2484 2492 2505 2508 2517 ABSOLUTE. HEX VALUE(0000000A)
104	SUPSTAT	2117 ADDRESS. HEX LOCATION(000019C4) IN CSECT(I7A40 ) LENGTH(1)
2742	TEST	2403 ADDRESS. HEX LOCATION(0000329A) IN CSECT(I7A40 ) LENGTH(6)
92	TUMSGWTR	2753 ADDRESS. HEX LOCATION(000018BA) IN CSECT(I7A40 ) LENGTH(1)
76	TUPARM1	2405 ADDRESS. HEX LOCATION(0000189A) IN CSECT(I7A40 ) LENGTH(1)
77	TUPARM2	2480 2486 2494 2510 2527 2932 ADDRESS. HEX LOCATION(0000189C) IN CSECT(I7A40 ) LENGTH(1)
98	TURESUL	2489 2513 ADDRESS. HEX LOCATION(000018C8) IN CSECT(I7A40 ) LENGTH(1)
1045	TURTN	2507 2524 2529 2530 2531 2532 2580 2581 2582 2583 2605 2637 2638 2639 2825 2955 2956 2957 2958 2961 3009 3010 3011 3012 3029 3059 3178 ADDRESS. HEX LOCATION(00002AA6) IN CSECT(I7A40 ) LENGTH(2)
74	TUSTATUS	2410 2473 2574 2926 3003 3089 ADDRESS. HEX LOCATION(00001818) IN CSECT(I7A40 ) LENGTH(1)
75	TUWORK	2380 ADDRESS. HEX LOCATION(0000181A) IN CSECT(I7A40 ) LENGTH(1)
2784	TWOSC	2383 2384 2385 2387 2443 2932 2935 2936 2943 2954 2955 2956 2957 2958 2959 ADDRESS. HEX LOCATION(000032EC) IN CSECT(I7A40 ) LENGTH(4)
2823	TWSC	2600 3026 3117 ADDRESS. HEX LOCATION(00003386) IN CSECT(I7A40 ) LENGTH(4)
2821	TWSC1	2784 2827 ADDRESS. HEX LOCATION(0000337A) IN CSECT(I7A40 ) LENGTH(6)
1054	T7A02	2813 ADDRESS. HEX LOCATION(00002AAE) IN CSECT(I7A40 ) LENGTH(6)
2473	T7A06	494 526 544 576 656 688 706 738 759 817 838 ADDRESS. HEX LOCATION(00002FF2) IN CSECT(I7A40 ) LENGTH(4)
2574	T7A07	773 ADDRESS. HEX LOCATION(000030DE) IN CSECT(I7A40 ) LENGTH(4)
2926	T7A08	482 ADDRESS. HEX LOCATION(00003A24) IN CSECT(I7A40 ) LENGTH(4)
		506 556 588 626 668 718 750 787

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3003	T7A17	ADDRESS. HEX LOCATION(00003ABA) IN CSECT(I7A40 ) LENGTH(4) 644
3089	T7A54	ADDRESS. HEX LOCATION(00003BB0) IN CSECT(I7A40 ) LENGTH(4) 611
2963	T7A89	ADDRESS. HEX LOCATION(00003AB6) IN CSECT(I7A40 ) LENGTH(4) 2960
1240	VRDCB	ADDRESS. HEX LOCATION(00002B26) IN CSECT(I7A40 ) LENGTH(2) 1411 2512 2513 2514 2586 2588 2608 2615 3015 3017 3032 3039
2507	VRID	ADDRESS. HEX LOCATION(00003070) IN CSECT(I7A40 ) LENGTH(6) 2502
2733	WB	ADDRESS. HEX LOCATION(00003278) IN CSECT(I7A40 ) LENGTH(6) 2723 2729
2734	WB1	ADDRESS. HEX LOCATION(0000327E) IN CSECT(I7A40 ) LENGTH(4) 2732
2740	WB2	ADDRESS. HEX LOCATION(00003292) IN CSECT(I7A40 ) LENGTH(4) 2736
2760	WB3	ADDRESS. HEX LOCATION(000032E0) IN CSECT(I7A40 ) LENGTH(4) 2757 2762
1297	WDATA	ADDRESS. HEX LOCATION(00002B7C) IN CSECT(I7A40 ) LENGTH(2) 2733
1262	WKDCB	ADDRESS. HEX LOCATION(00002B46) IN CSECT(I7A40 ) LENGTH(2) 1425 1426
2888	WRBUF	ADDRESS. HEX LOCATION(00003524) IN CSECT(I7A40 ) LENGTH(2) 2589 2735 3018 3129 3130 3134 3140 3149 3154
1229	WRDCB	ADDRESS. HEX LOCATION(00002B16) IN CSECT(I7A40 ) LENGTH(2) 1414 1460 2585 2587 2588 2589 2606 2607 2615 3014 3016 3017 3018 3030 3031 3039
1079	WRITO	ABSOLUTE. HEX VALUE(00000010) 1455
1080	WRIT1	ABSOLUTE. HEX VALUE(00000011) 1457
1301	WRSID	ADDRESS. HEX LOCATION(00002B84) IN CSECT(I7A40 ) LENGTH(2) 1192 1269 1337 1426 1430 2806
1185	WSDCB	ADDRESS. HEX LOCATION(00002AD6) IN CSECT(I7A40 ) LENGTH(2) 1429 1430
992	XE	ABSOLUTE. HEX VALUE(00000024) 2212 2274 2479
990	XI	ABSOLUTE. HEX VALUE(00000022) 1448 2116 2259
2088	XIO	ADDRESS. HEX LOCATION(00002CC6) IN CSECT(I7A40 ) LENGTH(4) 1384 1387 1395 1402 1409 1412 1415 1423 1427 1431 1434 3182
2274	XIOCK	ADDRESS. HEX LOCATION(00002D9A) IN CSECT(I7A40 ) LENGTH(2) 2126
2281	XIOCO	ADDRESS. HEX LOCATION(00002DAC) IN CSECT(I7A40 ) LENGTH(2) 2279
2291	XIOCO	ADDRESS. HEX LOCATION(00002DC2) IN CSECT(I7A40 ) LENGTH(4) 2288
2096	XIOCS	ADDRESS. HEX LOCATION(00002CD8) IN CSECT(I7A40 ) LENGTH(6) 2292 2525 2629 2671 2933 2941 2952 3049
2283	XIOCV	ADDRESS. HEX LOCATION(00002DB0) IN CSECT(I7A40 ) LENGTH(2) 2277
2294	XIOCX	ADDRESS. HEX LOCATION(00002DCE) IN CSECT(I7A40 ) LENGTH(4) 2284
2091	XIODG	ADDRESS. HEX LOCATION(00002CCC) IN CSECT(I7A40 ) LENGTH(6) 1461 1468
2167	XIOER	ADDRESS. HEX LOCATION(00002D38) IN CSECT(I7A40 ) LENGTH(2) 2300
2100	XIO1	ADDRESS. HEX LOCATION(00002CE8) IN CSECT(I7A40 ) LENGTH(4) 2089 2092
2113	XIO2	ADDRESS. HEX LOCATION(00002D0E) IN CSECT(I7A40 ) LENGTH(2) 2099
2125	XIO8	ADDRESS. HEX LOCATION(00002D24) IN CSECT(I7A40 ) LENGTH(2) 1456 1458 2132
3179	XSCAN	ADDRESS. HEX LOCATION(00003CC4) IN CSECT(I7A40 ) LENGTH(4) 3147 3177
62	XTRNL	ABSOLUTE. HEX VALUE(00000001) 522 540 572 604 684 702 734 766 813 831 852
2531	X7A06	ADDRESS. HEX LOCATION(000030CE) IN CSECT(I7A40 ) LENGTH(6) 2528
2637	X7A07	ADDRESS. HEX LOCATION(000031CA) IN CSECT(I7A40 ) LENGTH(6) 2628 2644 2648
3057	X7A17	ADDRESS. HEX LOCATION(00003B8A) IN CSECT(I7A40 ) LENGTH(6) 3064 3068
3049	X7A17A	ADDRESS. HEX LOCATION(00003B6A) IN CSECT(I7A40 ) LENGTH(4) 3028 3038 3045
2629	X7A71	ADDRESS. HEX LOCATION(000031AA) IN CSECT(I7A40 ) LENGTH(4) 2604 2614 2621