

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976

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3 ***** COPY LOG7840 ***** ** MAP EC HISTORY **
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40 I7840 START X'2500' START ADDRESS OF ALL 'I' TYPE PROG
41 @QUES EQU X'0100' EQUATED VALUE FOR MDI STATEMENT
42 @FIXT EQU X'0101' EQUATED VALUE FOR MDI STATEMENT
43 @STOP EQU X'0102' EQUATED VALUE FOR MDI STATEMENT
44 @GOTO EQU X'0200' EQUATED VALUE FOR MDI STATEMENT
45 @CALL EQU X'0201' EQUATED VALUE FOR MDI STATEMENT
46 @INPT EQU X'0300' EQUATED VALUE FOR MDI STATEMENT
47 @UXX EQU X'0400' EQUATED VALUE FOR MDI STATEMENT
48 @UXX EQU X'0500' EQUATED VALUE FOR MDI STATEMENT
49 @NVLD EQU X'0600' EQUATED VALUE FOR MDI STATEMENT
50 @ EQU X'0000' EQUATE FOR EQUAL
51 @ EQU X'0004' EQUATE FOR NOT EQUAL
52 @HI EQU X'0008' EQUATE FOR HIGH
53 @NH EQU X'000C' EQUATE FOR NOT HIGH
54 @LO EQU X'0010' EQUATE FOR LOW
55 @NL EQU X'0014' EQUATE FOR NOT LOW
56 @LT EQU X'0010' EQUATE FOR LESS THAN
57 @LE EQU X'000C' EQUATE FOR LESS THAN OR EQUAL TO
58 @GT EQU X'0008' EQUATE FOR GREATER THAN
59 @GE EQU X'0004' EQUATE FOR GREATER THAN OR EQUAL TO
60 @ON EQU X'0400' EQUATE FOR ON
61 @OFF EQU X'0202' EQUATE FOR OFF
62 @MX EQU X'0204' EQUATE FOR MIXED
63 @EBC EQU X'0000' EQUATE FOR EBCDIC DATA TRANSFER
64 @HEX EQU X'0001' EQUATE FOR HEX DATA TRANSFER
65 @XTRNL EQU X'0001' EQUATE FOR EXTERNAL REFERENCE
66 @INTRNL EQU X'0000' EQUATE FOR INTERNAL REFERENCE
67 @PARM EQU X'0000' EQUATE INDICATING PARAMETER
68 @DA EQU X'0001' EQUATE FOR DEVICE ADDRESS
69 @UA EQU X'0002' EQUATE FOR UNIT ADDRESS
70 @DUMMY EQU X'0000' DUMMY EQUATE
71 @PID EQU *X'0000' ADDRESS OF MDI HEADER
72 @PTVDE EQU *X'200E' ADDRESS OF PROCESSOR TYPE FIELD
73 @STEPNUM EQU PTD+X'000C' ADDRESS OF DECIMAL STEP NUMBER
74 @OPND1 EQU PTD+X'000E' ADDRESS OF OPTION WORD ONE
75 @OPND2 EQU PTD+X'0010' ADDRESS OF OPTION WORD TWO
76 @TUSTATUS EQU PTD+X'0018' ADDRESS OF TU STATUS WORD
77 @TUWORK EQU PTD+X'001A' ADDRESS OF TU WORK AREA
78 @TUPARM1 EQU PTD+X'009A' ADDRESS OF PARM 1 POINTER
79 @TUPARM2 EQU PTD+X'009C' ADDRESS OF PARM 2 POINTER
80 @TUPARM3 EQU PTD+X'009E' ADDRESS OF PARM 3 POINTER
81 @TUPARM4 EQU PTD+X'00A0' ADDRESS OF PARM 4 POINTER
82 @TUPARM5 EQU PTD+X'00A2' ADDRESS OF PARM 5 POINTER
83 @TUPARM6 EQU PTD+X'00A4' ADDRESS OF PARM 6 POINTER
84 @TUPARM7 EQU PTD+X'00A6' ADDRESS OF PARM 7 POINTER
85 @TUPARM8 EQU PTD+X'00A8' ADDRESS OF PARM 8 POINTER
86 @TUPARM9 EQU PTD+X'00AA' ADDRESS OF PARM 9 POINTER
87 @TUPARM10 EQU PTD+X'00AC' ADDRESS OF PARM 10 POINTER
88 @TUPARM11 EQU PTD+X'00AE' ADDRESS OF PARM 11 POINTER
89 @TUPARM12 EQU PTD+X'00B0' ADDRESS OF PARM 12 POINTER
90 @TUPARM13 EQU PTD+X'00B2' ADDRESS OF PARM 13 POINTER
91 @TUPARM14 EQU PTD+X'00B4' ADDRESS OF PARM 14 POINTER
92 @TUPARM15 EQU PTD+X'00B6' ADDRESS OF PARM 15 POINTER
93 @TUPARM16 EQU PTD+X'00B8' ADDRESS OF PARM 16 POINTER
94 @TUMSGWTR EQU PTD+X'00BA' ADDRESS OF -X TO COMMON MSG WRITER
95 @TUDA EQU PTD+X'00BB' ADDRESS OF UNIT ADDRESS IN EBC
96 @TUBA EQU PTD+X'00BB' ADDRESS OF UNIT ADDRESS IN EBC
97 @TUBA EQU PTD+X'00BB' ADDRESS OF UNIT ADDRESS IN EBC
98 @TUBUFF EQU PTD+X'00C2' ADDRESS OF LAST USED WORD IN MAP
99 @TULAST EQU PTD+X'00C4' ADDRESS OF LAST ADDRESSABLE WORD
100 @TURESULN EQU PTD+X'00C6' ADDRESS OF LENGTH OF TU RESULTS
101 @TURESUL EQU PTD+X'00C8' ADDRESS OF TU RESULTS FIELD
102 @MAPNAME EQU PTD+X'00FC' ADDRESS OF MAP NAME FIELD IN HEX
103 @TUINPT EQU PTD+X'0148' ADDRESS OF SINPT DATA
104 @PARMARA EQU PTD+X'016E' ADDRESS OF SINPT INPUT AREA
105 @DCADD1 EQU PTD+X'01B8' MDI POINTER
106 @DCADD2 EQU PTD+X'01BA' MDI POINTER
107 @SUPSTAT EQU PTD+X'01C4' ADDRESS OF MDI STATUS
108 @DEVADD EQU PTD+X'01D0' ADDRESS OF DEVICE ADDRESS TABLE 1
109 @DEVADD1 EQU PTD+X'01D1' ADDRESS OF DEVICE ADDRESS TABLE 2
110 @DEVADD2 EQU PTD+X'01E4' ADDRESS OF DEVICE ADDRESS TABLE 3
111 @DEVADD3 EQU PTD+X'01E5' ADDRESS OF DEVICE ADDRESS TABLE 4
112 @DEVADD4 EQU PTD+X'01F8' ADDRESS OF DEVICE ADDRESS TABLE 5
113 @DEVADD5 EQU PTD+X'0202' ADDRESS OF DEVICE ADDRESS TABLE 6
114 @DEVADD6 EQU PTD+X'020C' ADDRESS OF DEVICE ADDRESS TABLE 7
115 @DEVADD7 EQU PTD+X'0216' ADDRESS OF DEVICE ADDRESS TABLE 7
116 PRINT OFF

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201 ***** DC A(ENTPT) ***** POINT TO MAP ENTRY POINT TABLE
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THE FOLLOWING TABLES ARE USED BY THE MDI SUPERVISOR (D300) TO LOCATE THE CORRECT RULE TO INVOKE TO OBTAIN THE PROPER PARAMETERS TO PASS TO THE TUS AND TO PASS TO THE OPERATOR THE INDICATED MESSAGE(S). THERE ARE FOUR TABLES USED FOR THIS PURPOSE THEY ARE:

STEP AND RULE ADDRESS TABLE
THIS TABLE GIVES THE ADDRESS OF THE RULE TO INVOKE AND THE ASSOCIATED STEP DECIMAL STEP NUMBER OF THAT RULE. ENTRIES ARE AS FOLLOWS
A) AN ADDRESS OF THE RULE DC START AREA
B) THE STEP NUMBER IN DECIMAL
C) AN EQUATE FOR THE STEP NUMBER

RULE INFORMATION TABLE
THIS TABLE CONTAINS THE REQUIRED INFORMATION TO EXECUTE THE APPROPRIATE RULE UNDER MDI. EACH RULE HAS ITS OWN UNIQUELY DEFINED AREA INDICATED BELOW. END OF TABLE IS INDICATED WITH A X'0000' FOR THE RULE EQUATE.

\$QUES
A) RULE EQUATE X'0100'
B) ADDRESS OF THE YES LEG RULE

\$FIXT
A) RULE EQUATE X'0101'
B) ADDRESS OF MESSAGE TO PRINT

\$STOP
A) RULE EQUATE X'0102'
B) ADDRESS OF MESSAGE

\$GOTO
A) RULE EQUATE X'0200'
B) ADDRESS OF MESSAGE
C) NAME OF MAP TO GO TO
D) ENTRY POINT WITHIN GO TO MAP TO USE
E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE

\$CALL
A) RULE EQUATE X'0201'
B) ADDRESS OF MESSAGE
C) NAME OF MAP TO CALL
D) ENTRY POINT WITHIN CALLED MAP TO USE
E) INDICATOR FOR EXTERNAL OR INTERNAL REFERENCE

\$INPT
A) RULE EQUATE X'0300'
B) INPUT TYPE (EBCDIC OR HEX)
C) ADDRESS OF YES LEG RULE
D) DESTINATION LOCATION OF INPUT DATA
E) LENGTH OF INPUT DATA
F) LOWER LIMIT OF GOOD DATA
G) HIGHER LIMIT OF GOOD DATA

\$QUXX
A) RULE EQUATE X'0400'
B) ADDRESS OF YES LEG RULE
C) TU BRANCH TO ADDRESS (INITIAL)
D) TU BRANCH TO ADDRESS (SECONDARY)
E) LENGTH OF PARAMETER IN BYTES
F) PARAMETER TO PASS TO THE TU
G) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER

\$TUXX
A) RULE EQUATE X'0500'
B) ADDRESS OF YES LEG RULE
C) TU BRANCH TO ADDRESS
D) TYPE OF COMPARE TO MAKE ON RESULTS
E) LENGTH OF COMPARED RESULTS
F) MASK FIELD FOR COMPARE
G) LENGTH OF PARAMETER IN BYTES
H) PARAMETER TO PASS TO THE TU
I) STORE ADDRESS FOR FIRST 8 WORDS OF PARAMETER

\$NVLD
A) RULE EQUATE X'0600'

ENTRY POINT TABLE
THIS TABLE CONTAINS THE ENTRY POINTS WITHIN THE MAP THAT THE MAP CAN BE ENTERED FROM THESE ENTRY POINTS ARE REFERENCED BY NAME AND ADDRESS. ENTRIES ARE AS FOLLOWS:
A) NAME OF ENTRY POINT
B) ADDRESS OF ENTRY POINT RULE TABLE

THE ENTRY POINT TABLE END IS INDICATED BY A X'0000'

MESSAGE TABLE
THIS TABLE CONTAINS THE MESSAGE PASSED TO THE OPERATOR VIA THE MDI SUPERVISOR. THE TABLE IS AS FOLLOWS:
A) EQUATE FOR START OF MESSAGE BLOCK
B) NUMBER OF LINES OF MESSAGE
C) LENGTH OF FOLLOWING LINE
D) FIRST LINE OF MESSAGE
E) LENGTH OF FOLLOWING LINE
F) SECOND LINE OF MESSAGE
G) ETC.

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT
311			*****
312			*****
313			*****
314			*****
315			*****
316			*****
317			*****
002502	2590	318	DC AL2(N00001)
002504	0001	319	DC XL2'0001'
000001		320	EQN00001 EQU 0001
002506	25A2	321	DC AL2(N00002)
002508	0002	322	DC XL2'0002'
000002		323	EQN00002 EQU 0002
00250A	25B4	324	DC AL2(N00003)
00250C	0003	325	DC XL2'0003'
000003		326	EQN00003 EQU 0003
00250E	25C2	327	DC AL2(N00004)
002510	0004	328	DC XL2'0004'
000004		329	EQN00004 EQU 0004
002512	25D0	330	DC AL2(N00005)
002514	0005	331	DC XL2'0005'
000005		332	EQN00005 EQU 0005
002516	25D4	333	DC AL2(N00006)
002518	0006	334	DC XL2'0006'
000006		335	EQN00006 EQU 0006
00251A	25D8	336	DC AL2(N00007)
00251C	0007	337	DC XL2'0007'
000007		338	EQN00007 EQU 0007
00251E	25DC	339	DC AL2(N00008)
002520	0008	340	DC XL2'0008'
000008		341	EQN00008 EQU 0008
002522	25E0	342	DC AL2(N00009)
002524	0009	343	DC XL2'0009'
000009		344	EQN00009 EQU 0009
002526	25EE	345	DC AL2(N00010)
002528	0010	346	DC XL2'0010'
000010		347	EQN00010 EQU 0010
00252A	25FC	348	DC AL2(N00011)
00252C	0011	349	DC XL2'0011'
000011		350	EQN00011 EQU 0011
00252E	2600	351	DC AL2(N00012)
002530	0012	352	DC XL2'0012'
000012		353	EQN00012 EQU 0012
002532	2604	354	DC AL2(N00013)
002534	0013	355	DC XL2'0013'
000013		356	EQN00013 EQU 0013
002536	2608	357	DC AL2(N00014)
002538	0014	358	DC XL2'0014'
000014		359	EQN00014 EQU 0014
00253A	260C	360	DC AL2(N00015)
00253C	0015	361	DC XL2'0015'
000015		362	EQN00015 EQU 0015
00253E	2610	363	DC AL2(N00016)
002540	0016	364	DC XL2'0016'
000016		365	EQN00016 EQU 0016
002542	2614	366	DC AL2(N00017)
002544	0017	367	DC XL2'0017'
000017		368	EQN00017 EQU 0017
002546	2618	369	DC AL2(N00018)
002548	0018	370	DC XL2'0018'
000018		371	EQN00018 EQU 0018
00254A	261C	372	DC AL2(N00019)
00254C	0019	373	DC XL2'0019'
000019		374	EQN00019 EQU 0019
00254E	261E	375	DC AL2(N00020)
002550	0020	376	DC XL2'0020'
000020		377	EQN00020 EQU 0020
002552	2620	378	DC AL2(N00021)
002554	0021	379	DC XL2'0021'
000021		380	EQN00021 EQU 0021
002556	2624	381	DC AL2(N00022)
002558	0022	382	DC XL2'0022'
000022		383	EQN00022 EQU 0022
00255A	2628	384	DC AL2(N00023)
00255C	0023	385	DC XL2'0023'
000023		386	EQN00023 EQU 0023
00255E	262C	387	DC AL2(N00024)
002560	0024	388	DC XL2'0024'
000024		389	EQN00024 EQU 0024
002562	2630	390	DC AL2(N00025)
002564	0025	391	DC XL2'0025'
000025		392	EQN00025 EQU 0025
002566	2634	393	DC AL2(N00026)
002568	0026	394	DC XL2'0026'
000026		395	EQN00026 EQU 0026
00256A	2638	396	DC AL2(N00027)
00256C	0027	397	DC XL2'0027'
000027		398	EQN00027 EQU 0027
00256E	263C	399	DC AL2(N00028)
002570	0028	400	DC XL2'0028'
000028		401	EQN00028 EQU 0028
002572	2640	402	DC AL2(N00029)
002574	0029	403	DC XL2'0029'
000029		404	EQN00029 EQU 0029
002576	2644	405	DC AL2(N00030)
002578	0030	406	DC XL2'0030'
000030		407	EQN00030 EQU 0030
00257A	2648	408	DC AL2(N00031)
00257C	0031	409	DC XL2'0031'
000031		410	EQN00031 EQU 0031
00257E	264C	411	DC AL2(N00032)
002580	0032	412	DC XL2'0032'
000032		413	EQN00032 EQU 0032
002582	2650	414	DC AL2(N00033)
002584	0033	415	DC XL2'0033'
000033		416	EQN00033 EQU 0033
002586	2654	417	DC AL2(N00034)
002588	0034	418	DC XL2'0034'
000034		419	EQN00034 EQU 0034
00258A	2658	420	DC AL2(N00035)
00258C	0035	421	DC XL2'0035'
000035		422	EQN00035 EQU 0035
00258E	0000	423	DC AL2(DUMMY)
424			*****

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT
425			*****
426			*****
427			*****
428			*****
429			*****
430			*****
431	N00001	STUXX	T7812,02,C000,MX,CT=(Q00040),YES=N00027,ST=(S00041)
432	N00001	DC	A(ATUXX)
433		DC	AL2(N00027)
434		DC	A(T7812)
435		DC	AL2(MX)
436		DC	AL2(02)
437		DC	Y(C000)
438		DC	ALIGN WORD
439		DC	AL2(0)
440		DC	C'AA'
441		DC	ALIGN WORD
442		DC	AL2(PARMAPA)
443	N00002	STUXX	T7812,02,0800,ON,CT=(Q00051),YES=N00026
444	N00002	DC	A(ATUXX)
445		DC	AL2(N00026)
446		DC	A(T7812)
447		DC	AL2(ON)
448		DC	AL2(02)
449		DC	Y(0800)
450		DC	ALIGN WORD
451		DC	AL2(0)
452		DC	C'AA'
453		DC	ALIGN WORD
454		DC	AL2(PARMARA)
455	N00003	SQUXX	T7838,PLNG=02,PARM=00,REPT=TS16L,QT=(Q00060),YES=N00009,X
456	N00003	DC	A(SQUXX)
457		DC	AL2(N00009)
458		DC	A(T7838)
459		DC	AL2(TS16L)
460		DC	AL2(02)
461		DC	C'00
462		DC	ALIGN WORD
463		DC	AL2(PARMARA)
464	N00004	SQUXX	T7838,PLNG=02,PARM=00,REPT=TS16L,QT=(Q00075),YES=N00006,X
465	N00004	DC	A(SQUXX)
466		DC	AL2(N00006)
467		DC	A(T7838)
468		DC	AL2(TS16L)
469		DC	AL2(02)
470		DC	C'00
471		DC	ALIGN WORD
472		DC	AL2(PARMARA)
473	N00005	SFIXT	PT=(F00079)
474	N00005	DC	A(SFIXT)
475		DC	A(F00079)
476	N00006	SQUES	QT=(Q00086),YES=N00008,CT=(C00081)
477	N00006	DC	A(SQUES)
478		DC	AL2(N00008)
479	N00007	SFIXT	PT=(F00088)
480	N00007	DC	A(SFIXT)
481		DC	A(F00088)
482	N00008	SFIXT	PT=(F00090)
483	N00008	DC	A(SFIXT)
484		DC	A(F00090)
485	N00009	SQUXX	T7838,PLNG=02,PARM=01,REPT=TS16L,QT=(Q00099),YES=N00015,X
486	N00009	DC	A(SQUXX)
487		DC	AL2(N00015)
488		DC	A(T7838)
489		DC	AL2(TS16L)
490		DC	AL2(02)
491		DC	C'01
492		DC	ALIGN WORD
493		DC	AL2(PARMARA)
494	N00010	SQUXX	T7838,PLNG=02,PARM=01,REPT=TS16L,QT=(Q00112),YES=N00012,X
495	N00010	DC	A(SQUXX)
496		DC	AL2(N00012)
497		DC	A(T7838)
498		DC	AL2(TS16L)
499		DC	AL2(02)
500		DC	C'01
501		DC	ALIGN WORD
502		DC	AL2(PARMARA)
503	N00011	SFIXT	PT=(F00116)
504	N00011	DC	A(SFIXT)
505		DC	A(F00116)
506	N00012	SQUES	QT=(Q00123),YES=N00014,CT=(C00118)
507	N00012	DC	A(SQUES)
508		DC	AL2(N00014)
509	N00013	SFIXT	PT=(F00125)
510	N00013	DC	A(SFIXT)
511		DC	A(F00125)
512	N00014	SFIXT	PT=(F00127)
513	N00014	DC	A(SFIXT)
514		DC	A(F00127)
515	N00015	STUXX	T7850,03,020000,ON,PLNG=05,PARM=00/01,CT=(Q00129), X
516	N00015	DC	A(ATUXX)
517		DC	AL2(N00025)
518		DC	A(T7850)
519		DC	AL2(ON)
520		DC	AL2(03)
521		DC	Y(020000)
522		DC	ALIGN WORD
523		DC	AL2(05)
524		DC	C'00/01'
525		DC	ALIGN WORD
526		DC	AL2(PARMARA)
527	N00016	STUXX	T3C02,03,0000C0,MX,QT=(Q00134),YES=N00022,CT=(C00016)
528	N00016	DC	A(ATUXX)
529		DC	AL2(N00022)
530		DC	A(T3C02)
531		DC	AL2(MX)
532		DC	AL2(03)
533		DC	Y(0000C0)
534		DC	ALIGN WORD
535		DC	AL2(0)
536		DC	C'AA'
537		DC	ALIGN WORD
538		DC	AL2(PARMARA)
002590	0500	002590	DC 0500
002592	2680	002592	DC 2680
002594	2EA2	002594	DC 2EA2
002596	0204	002596	DC 0204
002598	0002	002598	DC 0002
00259A	C000	00259A	DC C000
00259C	0000	00259C	DC 0000
00259E	C1C1	00259E	DC C1C1
0025A0	196E	0025A0	DC 196E
0025A2	0500	0025A2	DC 0500
0025A4	2674	0025A4	DC 2674
0025A6	2EA2	0025A6	DC 2EA2
0025A8	0200	0025A8	DC 0200
0025AA	0002	0025AA	DC 0002
0025AC	0800	0025AC	DC 0800
0025AE	0000	0025AE	DC 0000
0025B0	C1C1	0025B0	DC C1C1
0025B2	196E	0025B2	DC 196E
0025B4	0400	0025B4	DC 0400
0025B6	25E0	0025B6	DC 25E0
0025B8	2E66	0025B8	DC 2E66
0025BA	2E8C	0025BA	DC 2E8C
0025BC	0002	0025BC	DC 0002
0025BE	F0F0	0025BE	DC F0F0
0025C0	196E	0025C0	DC 196E
0025C2	0400	0025C2	DC 0400
0025C4	25D4	0025C4	DC 25D4
0025C6	2E66	0025C6	DC 2E66
0025C8	2E8C	0025C8	DC 2E8C
0025CA	0002	0025CA	DC 0002
0025CC	F0F0	0025CC	DC F0F0
0025CE	196E	0025CE	DC 196E
0025D0	0101	0025D0	DC 0101
0025D2	26E6	0025D2	DC 26E6
0025D4	0100	0025D4	DC 0100
0025D6	25DC	0025D6	DC 25DC
0025D8	0101	0025D8	DC 0101
0025DA	2834	0025DA	DC 2834
0025DC	0101	0025DC	DC 0101
0025DE	2864	0025DE	DC 2864
0025E0	0400	0025E0	DC 0400
0025E2	260C	0025E2	DC 260C
0025E4	2E66	0025E4	DC 2E66
0025E6	2E8C	0025E6	DC 2E8C
0025E8	0002	0025E8	DC 0002
0025EA	F0F1	0025EA	DC F0F1
0025EC	196E	0025EC	DC 196E
0025EE	0400	0025EE	DC 0400
0025F0	2600	0025F0	DC 2600
0025F2	2E66	0025F2	DC 2E66
0025F4	2E8C	0025F4	DC 2E8C
0025F6	0002	0025F6	DC 0002
0025F8	F0F1	0025F8	DC F0F1
0025FA	196E	0025FA	DC 196E
0025FC	0101	0025FC	DC 0101
0025FE	2942	0025FE	DC 2942
002600	0100	002600	DC 0100
002602	2608	002602	DC 2608
002604	0101	002604	DC 0101
002606	2A94	002606	DC 2

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LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002638	0100	539	N00017	\$QUES QT=(Q00140),YES=N00019,CT=(C00138)
00263A	2640	540	N00017	DC A(@QUES)
		541		DC AL2(N00019)
00263C	0101	542	N00018	\$FIXT FT=(F00142)
00263E	2BA2	543	N00018	DC A(@FIXT)
		544		DC A(F00142)
002640	0100	545	N00019	\$QUES QT=(Q00146),YES=N00021,CT=(C00144)
002642	2648	546	N00019	DC A(@QUES)
		547		DC AL2(N00021)
002644	0101	548	N00020	\$FIXT FT=(F00014),CT=(C00033)
002646	2BEA	549	N00020	DC A(@FIXT)
		550		DC A(F00014)
002648	0200	551	N00021	\$GOTO TYPE=INTRNL,MAP=7841,EP=A,FT=(F00151),GTO=((7841,A))
00264A	2C02	552	N00021	DC A(@GOTO)
00264C	F7F8F4F1	553		DC A(F00151)
002650	C140	554		DC CL4'7841'
002652	0001	555		DC CL2'A'
		556		DC AL2(XTRNL)
002654	0400	557	N00022	\$QUXX T7872,REPT=T72A,QT=(Q00165),YES=N00024,
002656	2664	558	N00022	DC A(@QUXX)
002658	3524	559		DC AL2(N00024)
00265A	3536	560		DC A(T7872)
00265C	0000	561		DC AL2(T72A)
00265E	C1C1	562		DC AL2(O)
		563		DC CL'A'
		564		DC CL2'A'
002660	196E	565		ALIGN WORD
		566	N00023	DC AL2(PARMARA)
002662	0600	567	N00023	\$NVLD FT=(F00006)
		568	N00024	DC A(@NVLD)
		569	N00024	\$GOTO TYPE=INTRNL,MAP=7841,EP=A,FT=(F00179),GTO=((7841,A))
002664	0200	570		DC A(@GOTO)
002666	2C30	571		DC A(F00179)
002668	F7F8F4F1	572		DC CL4'7841'
00266C	C140	573		DC CL2'A'
00266E	0001	574		DC AL2(XTRNL)
002670	0101	575	N00025	\$FIXT FT=(F00032)
002672	2C36	576	N00025	DC A(@FIXT)
		577	N00026	\$GOTO TYPE=INTRNL,MAP=7843,EP=A,FT=(F00242),GTO=((7843,A))
002674	0200	578	N00026	DC A(@GOTO)
002676	2E7E	579		DC A(F00242)
002678	F7F8F4F3	580		DC CL4'7843'
00267C	C140	581		DC CL2'A'
00267E	0001	582		DC AL2(XTRNL)
002680	0400	583	N00027	\$QUXX T7872,REPT=T72A,QT=(Q00189),YES=N00029,
002682	2690	584	N00027	DC A(@QUXX)
002684	3524	585		DC AL2(N00029)
002686	3536	586		DC A(T7872)
002688	0000	587		DC AL2(T72A)
00268A	C1C1	588		DC AL2(O)
		589		DC CL'A'
		590		DC CL2'A'
00268C	196E	591		ALIGN WORD
		592	N00028	DC AL2(PARMARA)
00268E	0600	593	N00028	\$NVLD FT=(F00006)
		594	N00029	DC A(@NVLD)
		595	N00029	\$TUXX T7850,03,000000,EQ,PLNG=05,PARM=00/01,QT=(Q00203),
002690	0500	596	N00029	DC A(@TUXX)
002692	26C4	597		DC AL2(N00033)
002694	3082	598		DC A(T7850)
002696	0000	599		DC AL2(O3)
002698	0003	600		DC X'000000'
00269A	000000	601		ALIGN WORD
00269D	00	602		DC AL2(O5)
00269E	0005	603		DC C'00/01'
0026A0	F0F061F0F1	604		ALIGN WORD
0026A5	00	605		DC AL2(PARMARA)
0026A6	196E	606	N00030	\$QUXX T7872,REPT=T72A,QT=(Q00210),YES=N00032,CT=(C00206),
0026A8	0400	607	N00030	DC A(@QUXX)
0026AA	26B8	608		DC AL2(N00032)
0026AC	3524	609		DC A(T7872)
0026AE	3536	610		DC AL2(T72A)
0026B0	0000	611		DC AL2(O)
0026B2	C1C1	612		DC CL'A'
		613		DC CL2'A'
0026B4	196E	614		ALIGN WORD
		615	N00031	DC AL2(PARMARA)
0026B6	0600	616	N00031	\$NVLD FT=(F00006)
		617	N00032	DC A(@NVLD)
		618	N00032	\$GOTO TYPE=INTRNL,EP=B,FT=(F00216),GTO=(N00003)
0026B8	0200	619		DC A(@GOTO)
0026BA	2C84	620		DC A(F00216)
0026BC	F3C3F0F0	621		DC CL4'3C00'
0026C0	0240	622		DC CL2'B'
0026C2	0000	623	N00033	\$QUXX T7838,PLNG=02,PARM=00,REPT=TS16L,QT=(Q00230),YES=N00035,X
0026C4	0400	624	N00033	DC A(@QUXX)
0026C6	26D6	625		DC AL2(N00035)
0026C8	2E66	626		DC A(T7838)
0026CA	2E8C	627		DC AL2(TS16L)
0026CC	0002	628		DC AL2(O2)
0026CE	F0F0	629		DC CL'00'
		630		ALIGN WORD
0026D0	196E	631		DC AL2(PARMARA)
		632	N00034	\$FIXT FT=(F00236),CT=(C00033)
0026D2	0101	633	N00034	DC A(@FIXT)
0026D4	2C8A	634		DC A(F00236)
		635	N00035	\$FIXT FT=(F00239)
0026D6	0101	636	N00035	DC A(@FIXT)
0026D8	2C88	637		DC A(F00239)
0026DA	0000	638		DC AL2(DUMMY)
0026DC		639		ENTPT EQU *
		640		*****
		641		*****
		642		*****
		643		*****
		644		*****
		645		*****
		646		*****
0026DC	C140	647		ENTPT EP=A,STEP=00001
0026DE	2590	648		DC CL2'A'
		649		DC A(N00001)
0026E0	C240	650		ENTPT EP=B,STEP=00003
0026E2	25B4	651		DC CL2'B'
		652		DC A(N00003)

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LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
0026E4	0000	653		DC AL2(DUMMY)
		654		*****
		655		*****
		656		*****
		657		*****
		658		*****
		659		*****
		660		*****
0026E6	000B	661	F00079	EQU *
0026E8	001A	662		DC AL2(0011)
0026EA	D9C5D7D3C1C3C5404	663		DC A(0026)
0026EC	0022	664		DC CLO026'REPLACE (FCU) CAPD A-A1D2.'
0026EE	D9C5D7D3C1C3C540C	665		DC A(0034)
0026F0	0002	666		DC CLO034'REPLACE CARD A-A1G2. (SEE NOTE 1)'
0026F2	4040	667		DC A(0002)
0026F4	002A	668		DC CLO002'
0026F6	D5D6E3C540F1407A4	669		DC A(0042)
0026F8	002C	670		DC CLO042'NOTE 1 : AFTER THE NEW FRU IS INSTALLED ,'
0026FA	C5E7C5C3E4E3C540D	671		DC A(0044)
0026FC	0024	672		DC CLO044'EXECUTE MAP 7815 TO ENSURE THAT THE ACTUATOR'
0026FE	C1D9D440C9E240D4D	673		DC A(0036)
002700	0012	674		DC CLO036'ARM IS MOVING AT THE CORRECT SPEED. '
002702	E5C5D9C9C6E840E3C	675		DC A(0018)
002704	0002	676		DC CLO018'VERIFY THE REPAIR.'
002706	4040	677		DC A(0002)
002708	002C	678		DC CLO002'
00270A	C9C640D7D9D6C2D3C	679		DC A(0044)
00270C	002E	680		DC CLO044'IF PROBLEM NOT FIXED , TRACE FAILING SIGNAL '
00270E	D6D540C160C1F140C	681		DC A(0046)
002710	0010	682		DC CLO046'ON A-A1 BOARD TO POINT OF FAILURE. (SEE SF325 '
002712	6B40D4D3C440E5D6D	683		DC A(0016)
002714	0002	684		DC CLO016', MLD VOLUME 01)'
002716	0002	685	F00088	EQU *
002718	0018	686		DC AL2(0002)
00271A	D9C5D7C1C9D940D6D	687		DC A(0024)
00271C	0012	688		DC CLO024'REPAIR OR REPLACE CABLE.'
00271E	E5C5D9C9C6E840E3C	689		DC A(0018)
002720	0002	690		DC CLO018'VERIFY THE REPAIR.'
002722	4040	691	F00090	EQU *
002724	0008	692		DC AL2(0008)
002726	0022	693		DC A(0034)
002728	D9C5D7D3C1C3C540C	694		DC CLO034'REPLACE CARD A-A1G2. (SEE NOTE 1)'
00272A	001A	695		DC A(0026)
00272C	D9C5D7D3C1C3C5404	696		DC CLO026'REPLACE (DE) CARD D-W1B3. '
00272E	0002	697		DC A(0002)
002730	4040	698		DC CLO002'
002732	0012	699		DC A(0018)
002734	E5C5D9C9C6E840E3C	700		DC CLO018'VERIFY THE REPAIR.'
002736	0002	701		DC A(0002)
002738	4040	702		DC CLO002'
00273A	002A	703		DC A(0042)
00273C	D5D6E3C540F1407A4	704		DC CLO042'NOTE 1 : AFTER THE NEW FRU IS INSTALLED ,'
00273E	002C	705		DC A(0044)
002740	C5E7C5C3E4E3C540D	706		DC CLO044'EXECUTE MAP 7815 TO ENSURE THAT THE ACTUATOR'
002742	0024	707		DC A(0036)
002744	C1D9D440C9E240D4D	708		DC CLO036'ARM IS MOVING AT THE CORRECT SPEED. '
002746	000C	709	F00116	EQU *
002748	001A	710		DC AL2(0012)
00274A	D9C5D7D3C1C3C5404	711		DC A(0026)
00274C	0022	712		DC CLO026'REPLACE (FCU) CAPD A-A1C2.'
00274E	D9C5D7D3C1C3C540C	713		DC A(0034)
002750	0002	714		DC CLO034'REPLACE CARD A-A1G2. (SEE NOTE 1)'
002752	4040	715		DC A(0002)
002754	002A	716		DC CLO002'
002756	D5D6E3C540F1407A4	717		DC A(0042)
002758	002C	718		DC CLO042'NOTE 1 : AFTER THE NEW FRU IS INSTALLED ,'
00275A	C5E7C5C3E4E3C540D	719		DC A(0044)
00275C	0024	720		DC CLO044'EXECUTE MAP 7815 TO ENSURE THAT THE ACTUATOR'
00275E	C1D9D440C9E240D4D	721		DC A(0036)
002760	0002	722		DC CLO036'ARM IS MOVING AT THE CORRECT SPEED. '
002762	0012	723		DC A(0018)
002764	4040	724		DC CLO002'
002766	0012	725		DC A(0018)
002768	E5C5D9C9C6E840E3C	726		DC CLO018'VERIFY THE REPAIR.'
00276A	0002	727		DC A(0002)
00276C	4040	728		DC CLO002'
00276E	002C	729		DC A(0044)
002770	C9C640D7D9D6C2D3C	730		DC CLO044'IF PROBLEM NOT FIXED , TRACE FAILING SIGNAL '
002772	002E	731		DC A(0046)
002774	D6D540C160C1F140C	732		DC CLO046'ON A-A1 BOARD TO POINT OF FAILURE. (SEE SF325 '
002776	0010	733		DC A(0016)
002778	6B40D4D3C440E5D6D	734		DC CLO016', MLD VOLUME 01)'
00277A	0002	735	F00125	EQU *
00277C	0018	736		DC AL2(0002)
00277E	D9C5D7C1C9D940D6D	737		DC A(0024)
002780	0012	738		DC CLO024'REPAIR OR REPLACE CABLE.'
002782	E5C5D9C9C6E840E3C	739		DC A(0018)
002784	0002	740		DC CLO018'VERIFY THE REPAIR.'
002786	4040	741	F00127	EQU *
002788	0008	742		DC AL2(0008)
00278A	0022	743		DC A(0034)
00278C	D9C5D7D3C1C3C540C	744		DC CLO034'REPLACE CARD A-A1G2. (SEE NOTE

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002B8A		767	F00014 EQU *	
002B8A	0001	768	DC AL2(0001)	
002B8C	0014	769	DC A(0020)	
002B8E	D9C5D7D3C1C3C540C	770	DC CL0020'REPLACE CARD A-A1H2.'	
002C02		771	F00151 EQU *	
002C02	0001	772	DC AL2(0001)	
002C04	0002	773	DC A(0002)	
002C06	4040	774	DC CL0002'	
002C08		775	F00006 EQU *	
002C08	0001	776	DC AL2(0001)	
002C08	0024	777	DC A(0036)	
002C0C	7D5D67D40C9E240D	778	DC CL0036''NO'' IS NOT VALID , GO TO NEXT STEP.'	
002C30		779	F00179 EQU *	
002C30	0001	780	DC AL2(0001)	
002C32	0002	781	DC A(0002)	
002C34	4040	782	DC CL0002'	
002C36		783	F00182 EQU *	
002C36	0003	784	DC AL2(0003)	
002C38	0014	785	DC A(0020)	
002C3A	D9C5D7D3C1C3C540C	786	DC CL0020'REPLACE CARD A-A1J2.'	
002C4E	001A	787	DC A(0026)	
002C0A	D9C5D7D3C1C3C5404	788	DC CL0026'REPLACE (FCU) CAPD A-A1C2.'	
002C6A	0812	789	DC A(0018)	
002C6C	E5C5D9C9C6E840E3C	790	DC CL0018'VERIFY THE REPAIR.'	
002C7E		791	F00242 EQU *	
002C7E	0001	792	DC AL2(0001)	
002C80	0002	793	DC A(0002)	
002C82	4040	794	DC CL0002'	
002C84		795	F00216 EQU *	
002C84	0001	796	DC AL2(0001)	
002C86	0002	797	DC A(0002)	
002C88	4040	798	DC CL0002'	
002C8A		799	F00236 EQU *	
002C8A	0002	800	DC AL2(0002)	
002C8C	001A	801	DC CL0026'	
002C8E	D9C5D7D3C1C3C5404	802	DC CL0026'REPLACE (DE) CARD D-W1A2.'	
002CA8	000E	803	DC A(0014)	
002CAA	D9C5D4D6E5C540D1E	804	DC CL0014'REMOVE JUMPER.'	
002CB8		805	F00239 EQU *	
002CB8	000C	806	DC AL2(0012)	
002CBA	001C	807	DC A(0028)	
002CBC	D9C5C9D5E2E3C1D3D	808	DC CL0028'REINSTALL (DE) CARD D-W1A2.'	
002CDB	000E	809	DC A(0014)	
002CDA	D9C5D4D6E5C540D1E	810	DC CL0014'REMOVE JUMPER'	
002CEB	0022	811	DC A(0034)	
002CFA	D9C5D7D3C1C3C540C	812	DC CL0034'REPLACE CAPD A-A1G2. (SEE NOTE 1)'	
002D0C	002A	813	DC A(0042)	
002D0E	D5D6E3C540F1407A4	814	DC CL0042'NOTE 1 : AFTER THE NEW FRU IS INSTALLED ,	
002D38	002C	815	DC A(0044)	
002D3A	C5E7C5C3E4E3C540D	816	DC CL0044'EXECUTE MAP 7815 TO ENSURE THAT THE ACTUATOR'	
002D66	0024	817	DC A(0036)	
002D68	C1D9D440C9E240D4D	818	DC CL0036'ARM IS MOVING AT THE CORRECT SPEED.'	
002D8C	0002	819	DC A(0002)	
002D8E	4040	820	DC CL0002'	
002D90	0012	821	DC A(0018)	
002D92	E5C5D9C9C6E840E3C	822	DC CL0018'VERIFY THE REPAIR.'	
002DA4	0002	823	DC A(0002)	
002DA6	4040	824	DC CL0002'	
002DA8	002C	825	DC A(0044)	
002DAE	C9C640D7D9D6C2D3C	826	DC CL0044'IF PROBLEM NOT FIXED , TRACE FAILING SIGNAL'	
002DD6	002E	827	DC A(0046)	
002DD8	D6D540C160C1F140C	828	DC CL0046'ON A-A1 BOARD TO POINT OF FAILURE. (SEE SF325)'	
002E06	0010	829	DC A(0016)	
002E08	6B40D4D3C440E5D6D	830	DC CL0016', HLD VOLUME 01)'	
002E18	0000	831	HDIT 00B2	
002E1A	0000	833+OPTN1	DC X'0000'	PROGRAM OPTION CONTROL WORD 1
000010		835+OPTN2	DC X'0000'	PPROGRAM OPTION CONTROL WORD 2
000011		836+*	EQU 16 0 4	PROBLEM PROGRAM CONTROL BITS
000012		837+*	EQU 17 1 4	* THESE BITS ARE USED WITH THE
000013		838+*	EQU 18 2 2	* SECOND OPTION WD AND ARE TO
000014		839+*	EQU 19 3 1	* BE ASSIGNED BY EACH PROGRAMMER
000015		840+*	EQU 20 4 8	
000016		841+*	EQU 21 5 4	
000017		842+*	EQU 22 6 2	
000018		843+*	EQU 23 7 1	
000019		844+*	EQU 24 8 8	
00001A		845+*	EQU 25 9 4	
00001B		846+*	EQU 26 10 2	
00001C		847+*	EQU 27 11 1	
00001D		848+*	EQU 28 12 8	
00001E		849+*	EQU 29 13 4	
00001F		850+*	EQU 30 14 2	
000010		851+*	EQU 31 15 1	
000011		852+*	EQU 32 16 2	
000012		853+*	EQU 33 17 1	
000013		854+*	EQU 34 18 1	
000014		855+*	EQU 35 19 2	
000015		856+*	EQU 36 20 1	
000016		857+*	EQU 37 21 1	
000017		858+*	EQU 38 22 1	
000018		859+*	EQU 39 23 1	
000019		860+*	EQU 40 24 1	
00001A		861+*	EQU 41 25 1	
00001B		862+*	EQU 42 26 1	
00001C		863+*	EQU 43 27 1	
00001D		864+*	EQU 44 28 1	
00001E		865+*	EQU 45 29 1	
00001F		866+*	EQU 46 30 1	
000010		867+*	EQU 32 0 8	CHARACTER SUPPLIED
000021		868+*	EQU 33 1 4	COMPARE OPERATION
000022		869+*	EQU 34 2 2	PPROGRAM OPTION CONTROL WORD 3
000023		870+*	EQU 35 3 1	
000024		871+*	EQU 36 4 8	
000025		872+*	EQU 37 5 4	
000026		873+*	EQU 38 6 2	
000027		874+*	EQU 39 7 1	
000028		875+*	EQU 40 8 8	
000029		876+*	EQU 41 9 4	
00002A		877+*	EQU 42 10 2	
00002B		878+*	EQU 43 11 1	
00002C		879+*	EQU 44 12 8	
00002D		880+*	EQU 45 13 4	
00002E		881+*	EQU 46 14 2	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM COPP 1976
00002F		883+INCC	EQU 47 15 1	INTEPRUPT CC ERROP
884+*		884+*		
885+*		885+*		COMMON BUFFER FOR PRINTING DATA
886+*		886+*		
888+*	\$TUID	DC	A(*-*)	TEST UNIT IDENTIFICATION
889+*	\$IOTIN	DC	A(*-*)	I/O AND INTR CONDITION CODES
890+*	\$ISB	DC	A(*-*)	R7 INTR STATUS BYTE & DEV ADPS
891+*	\$LSTIO	DC	A(*-*)	ADPS OF LAST I/O + 4 BYTES
892+*	\$DEV1	DC	A(*-*)	DEVICE DEPENDENT DATA
893+*	\$DEV2	DC	A(*-*)	*
894+*	\$DEV3	DC	A(*-*)	*
895+*	\$DEV4	DC	A(*-*)	*
896+*	\$SCTID	EQU	DEV1	READ ID BUFFER POP IBIS & TERN
897+*	\$DCBUF	EQU	*	DCB BUFFER FOR LAST DCB USED
898+*	\$DCB1	DC	A(*-*)	LAST DCB TABLE, CONTROL WORD
899+*	\$DCB2	DC	A(*-*)	LAST DCB TABLE, DEV DEP WORD
900+*	\$DCB3	DC	A(*-*)	LAST DCB TABLE, DEV DEP WORD
901+*	\$DCB4	DC	A(*-*)	LAST DCB TABLE, DEV DEP WORD
902+*	\$DCB5	DC	A(*-*)	LAST DCB TABLE, DEV DEP WORD
903+*	\$DCB6	DC	A(*-*)	LAST DCB TABLE, CHAIN ADPS
904+*	\$DCB7	DC	A(*-*)	LAST DCB TABLE, BYTE COUNT
905+*	\$DCB8	DC	A(*-*)	LAST DCB TABLE, BUFFER ADDRESS
906+*				
907+*	\$CSBUF	EQU	*	CYCLE STEAL DATA BUFFER
908+*	\$CSTL1	DC	A(*-*)	CYCLE STEAL BUFFER, RESIDUAL ADPS
909+*	\$CSTL2	DC	A(*-*)	CYCLE STEAL WD 2, DEVICE DEPEND
910+*	\$CSTL3	DC	A(*-*)	CYCLE STEAL WD 3, DEVICE DEPEND
911+*	\$CSTL4	DC	A(*-*)	CYCLE STEAL WD 4, DEVICE DEPEND
912+*	\$CSTL5	DC	A(*-*)	CYCLE STEAL WD 5, DEVICE DEPEND
913+*	\$CSTL6	DC	A(*-*)	CYCLE STEAL WD 6, DEVICE DEPEND
914+*	\$CSTL7	DC	A(*-*)	CYCLE STEAL WD 7, DEVICE DEPEND
915+*	\$CSTL8	DC	A(*-*)	CYCLE STEAL WD 8, DEVICE DEPEND
916+*				
917+*	\$SUBN	DC	A(*-*)	LAST SUBROUTINE ADDRESS USED
918+*	\$DATA	DC	2A(*-*)	OPTIONAL DATA
919+*	\$INTL	DC	X'0021'	INTERRUPT LEVEL REQUESTED
920+*	\$TURTN	DC	A(*-*)	TEST UNIT RETURN ADPS TO MDI
921+*	\$DVID	DC	X'00B2'	DEVICE ID
922+*	\$VICAL	DC	A(DEVADD)	ADPS OF DEVICE ADDRESS
923+*		DC	A(*-*)	IBIS CYLINDER ADDRESS
924+*				
925+*				THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
926+*				FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
927+*				STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
928+*				
929+*	\$T3C02	MVWI	X'3C02', \$TUID	SET UP TEST UNIT ID
930+*		BXS	(R7)	RETURN TO MDI SUPVR
931+*				
932+*				COPY COMEQU
933+*				*****
934+*				*
935+*				*
936+*				EQUATED NAMES FOR SUPPORTED SVC'S
937+*				*
938+*				*****
939+*	OUT	EQU	0	OUT SVC
940+*	OUTIN	EQU	1	OUTIN SVC
941+*	IDLE	EQU	2	IDLE SVC
942+*	HEX	EQU	3	HEX TO ASCII SVC
943+*	CHNGE	EQU	4	CHANGE LEVEL SVC
944+*	PGMCK	EQU	5	ALLOW RETURN ON PPROGRAM CHECK SVC
945+*	EXIT	EQU	6	EXIT SVC
946+*	TEPM	EQU	7	TERMINATE SVC
947+*	RESET	EQU	8	RESET DEVICE SVC
948+*	RID	EQU	9	READ ID SVC
949+*	START	EQU	10	START CYCLE STEAL SVC
950+*	STCSS	EQU	11	START CYCLE STEAL STATUS SVC
951+*	PREP	EQU	12	PREPARE DEVICE SVC
952+*	READ0	EQU	13	READ WITH FUNCTION BIT 3 OFF SVC
953+*	READ1	EQU	14	READ WITH FUNCTION BIT 3 ON SVC
954+*	STAT	EQU	15	READ STATUS SVC
955+*	WRIT0	EQU	16	WRITE WITH FUNCTION BIT 3 OFF SVC
956+*	WRIT1	EQU	17	WRITE WITH FUNCTION BIT 3 ON SVC
957+*	CTRL	EQU	18	CONTROL SVC
958+*	RICB	EQU	19	RELEASE INTERRUPT CONTROL BLOCK SVC
959+*	CICB	EQU	20	CONNECT INTERRUPT CONTROL BLOCK SVC
960+*	HIO	EQU	21	HALT ALL I/O
961+*	RECSO	EQU	22	REQUEST USE OF DCP DISK SVC
962+*	RELSD	EQU	23	RELEASE USE OF DCP DISK SVC
963+*	HALT	EQU	24	HALT SVC
964+*	EHOD	EQU	25	EBCDIC TO HEX SVC (STRING)
965+*	HTOE	EQU	26	HEX TO EBCDIC SVC (STRING)
966+*	ATOH	EQU	27	ASCII TO HEX SVC (STRING)
967+*	HTOA	EQU	28	HEX TO ASCII SVC (STRING)
968+*	ETOA	EQU	29	EBCDIC TO ASCII SVC (STRING)
969+*	ATOE	EQU	30	ASCII TO EBCDIC SVC (STRING)
970+*	READI	EQU	31	READ DATA SETS FOR MDI/UTIL
971+*	WRITI	EQU	32	WRITE DATA SETS FOR UTIL
972+*				*****
973+*				*
974+*				*
975+*				EQUATES USED BY TU'S AS CONSTANTS
976+*				*
977+*				*****
978+*	PLUS	EQU	C'+'	PLUS CHAR
979+*	MINUS	EQU	C'-'	MINUS CHAR
980+*	ZERO	EQU	0	
981+*	ONE	EQU	1	
982+*	TWO	EQU	2	
983+*	THREE	EQU	3	
984+*	FOUR	EQU	4	
985+*	FIVE	EQU	5	
986+*	SIX	EQU	6	
987+*	SEVEN	EQU	7	
988+*	EIGHT	EQU	8	
989+*	NINE	EQU	9	
990+*	TEN	EQU	10	
991+*	ELEVN	EQU	11	
992+*	TWELV	EQU	12	
993+*	THRTN	EQU	13	
994+*	FIVTN	EQU	14	
995+*	SIXTN	EQU	15	
996+*	THRY2	EQU	16	
997+*	SIXT4	EQU	32	
998+*	ONE28	EQU	64	
999+*	TWO56	EQU	128	
1000+*	ONEK	EQU	256	
			1024	

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
000800 1001 TWOK EQU 2048
000C00 1002 THREE EQU 3072
001000 1003 FOUR EQU 4096
...
1118** . TURESUL BIT 14----- NOT USED

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
1119** . TURESUL BIT 15----- NOT USED
1120** .
1121** .
...
1233** . TURESUL BIT 14----- NOT USED

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGTH IEM CORP 1976
002F90 802B 35FE 2E27 1234 CB ZERF00,SCTID+1 FLAG ZERO?
002F96 1804 JNE S20C NO
002F98 402F 2E28 012E 1236 CWI 302,SCTID+2 CE TRACK?
002F9E 1009 JE S20D YFS
002FA0 402F 361C 003B 1238 S20C CWI 59,LGSEC END OF TRACK?
002FA5 6800 39A0 BE $ERR$ YES-BAD TRACK-RESTART ROUTINE
002FAA 4029 361C 0001 1240 AWI 1,LGSEC INCREMENT LOG SECT NUM
002FB0 50E4 J S20E LOOP
002FB2 6802 39F0 1242 S20D TXIT
1243 S20D B $CONX RETURN TO MDI CONTROLLER
1244 *****
1245 *
1246 *
1247 *
1249 COPY T7823 01DEC76
1250 T7823 TUIT $ERR$
1251 *****06FEB 76 **
1252 **
1253 ** TEST UNIT
1254 **
1255 ** (TU23-TU71) RECALIBRATE TEST #1 12/01/76
1256 **
1257 ** PURPOSE
1258 **
1259 ** FUNCTION: TO DETERMINE THE OPERATIONAL STATUS OF RECAL FUNCTION.
1260 **
1261 ** . PROGRAM INITIALIZES ATTACHMENT.
1262 ** . RECALIBRATE
1263 ** . CHECK STATUS OF LINES IN ATTACHMENT AND 4962 RELATED TO THE
1264 ** . RECALIBRATE OPERATION.
1265 **
1266 ** CALLING SEQUENCE
1267 **
1268 ** PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
1269 ** . TURESUL BIT 0-----INTEPRUPT ERROR
1270 ** . TURESUL BIT 1-----HOME POSITION NOT ON
1271 ** . TURESUL BIT 2-----NOT USED
1272 ** . TURESUL BIT 3-----SEEK CHRCK (SEEK COMPLETE TIME OUT
1273 ** .
1274 ** . TURESUL BIT 4-----NOT USED
1275 ** . TURESUL BIT 5-----NOT USED
1276 ** . TURESUL BIT 6-----NOT USED
1277 ** . TURESUL BIT 7-----NOT USED
1278 ** .
1279 ** . TURESUL BIT 8-----RESERVED (ALWAYS ZERO)
1280 ** . TURESUL BIT 9-----NOT USED
1281 ** . TURESUL BIT 10-----PLO OUT OF SYNC
1282 ** . TURESUL BIT 11-----BRAKE FAILURE
1283 ** .
1284 ** . TURESUL BIT 12-----UNSAFE
1285 ** . TURESUL BIT 13-----RECALIBRATE FAILURE
1286 ** . TURESUL BIT 14-----NOT PEADY
1287 ** . TURESUL BIT 15-----NOT USED
1288 ** .
1289 ** . TURESUL BITS 16-31-----CYCLE STEAL STATUS FOR FAILING OP
1290 **
1291 ** EXITS NORMAL
1292 ** . RETURNS TO MDI SUPERVISOR WHEN DONE.
1293 **
1294 ** EXITS ERROR
1295 ** . RETURN TO MDI SUPERVISOR.
1296 **
1297 ** RETURN CONTROL
1298 **
1299 ** B TURTN* RETURN TO MDI SUPERVISOR
1300 **
1301 *****
1302 T7823 MVW R7 TURTN SAVE RETURN ADDRESS
1303 MVWI X'7823',STUID SAVE TU ID FOR DISPLAY
1304 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
1305 BAL $CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1306 DC A($ERR$) ERROR ADRS FOR INVALID PREP
1307 **
1308 MVB CPUID,R0 DETERMINE TYPE OF PROCESSOR
1309 CBI 37,R0 *
1310 JNE T23T JUMP IF NOT 4955
1311 MVWI X'254C',T23T1+2 LOAD TIME CONSTANT FOR 2 SEC
1312 J T23T2
1313 T23T MVWI X'0C0E',T23T1+2 (4953) LOAD TIME CONS FOR 2 SEC
1314 T23T2 MVB DEVADD,IDCB1+1 LOAD DEVICE ADDRESS IN IDCB
1315 MVA IOBLK,R7 SETUP IOBLK
1316 SVC RESET ISSUE IO RESET
1317 T23T1 MVWI X'0000',R0 TIMEOUT APPROX 2 SEC
1318 T723 SVC *
1319 JCT T723,R0 *
1320 MVWZ TURESUL,R2 CLEAR RESULTS WORD
1321 MVWZ TURESUL+2,R2 CLEAR RESULTS WORD2
1322 MVA TURESUL,R2 ADDRESS OF RESULTS
1323 BAL $RECL,R6 RECALIBRATE
1324 DC A(T23TY) ERROR
1325 TBTP (R4,ER) INTERRUPT EPROR?
1326 JOFF T710 NO
1327 TBTR (R4,CSA) TST FOR CYCLE STEAL STATS
1328 BOFF $ERR$ ERROR
1329 MVW CSBUF+2,STATS ADDRESS OF CYCLE STEAL STATS
1330 MVA STATS,R5 *
1331 TBTP (R5,7) UNSAFE?
1332 JOFF T23SS NO
1333 TBTS (R2,12) SET- UNSAFE
1334 T23SS TBTR (R5,10) BRAKE FAILURE?
1335 JOFF T23TT NO
1336 TBTR (R2,11) SET- BRAKE FAILURE
1337 T23TT TBTR (R5,6) PLO OUT OF SYNC CHECK?
1338 JOFF T230U NO
1339 TBTS (R2,10) SET- PLO OUT OF SYNC
1340 T230U TBTR (R5,9) SEEK CHECK?
1341 JOFF T23A NO
1342 TBTS (R2,3) SET- SEEK CHECK
1343 T23A TBTR (R5,11) RESET UNSAFE BITS
1344 TBTR (R5,12) *
1345 TBTR (R5,13) *
1346 CBI 0,STATS *
1347 BE T23U *
1348 T23AA TBTS (R2,13) OTHER ERROR BITS ON?
NO-EXIT
SET RECAL FAILURE

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGTH IBM CORP 1976
003044 4A40 1349 TBTS (R2,0) SET- INTERRUPT ERROR
003046 8828 2E40 18CA 1350 MVW CSBUF+2,TURESUL+2 CS STATS
00304C 5018 1351 J T23U EXIT
00304E 7B06 0003 1352 T23YY CWI X'0003',R3 CHECK FOR COMMAND REJECT
003052 6801 39A0 1353 BNE $ERR$ ERROR-TU NG
003056 6E03 3864 1354 BAL XIOCS,R6 START CYCLE STEAL STATS
00305A 39A0 1355 DC A($ERR$) ERROR
00305C 4CA1 1356 TBTR (R4,ER) INTERRUPT ERROR?
00305E 6A00 39A0 1357 BON $ERR$ YES
003062 402B 2E40 0001 1358 TWI X'0001',CSBUF+2 NO-ERROR
003068 10EC 1359 JOFF T23AA T23AA SET NOT READY
00306A 4A4E 1360 TBTS (R2,14) SET NOT READY
00306C 50EA 1361 J T23AA EXIT
00306E 6E03 36CA 1362 T710 BAL SENS1,R6 GET SENSE WORD ONE
003072 39A0 1363 DC A($ERR$) ERROR
003074 402B 3706 0400 1364 TWI X'0400',PDATA TEST HOME POS
00307A 1201 1365 JON T23U HOME IS ON
00307C 4A41 1366 TBTS (R2,1) SET 'HOME OFF'
1367 T23U TXIT
1368 T23U B $CONX RETURN TO MDI CONTROLLER
1369 *****
1370 *
1372 COPY T7850 01DEC76
1373 T7850 TUIT $ERR$
1374 *****06FEB 76 **
1375 **
1376 ** TEST UNIT
1377 **
1378 ** TU50 READ ID TEST 1/07/77
1379 **
1380 ** PUPPOSE
1381 **
1382 ** FUNCTION:
1383 ** . PROGRAM INITIALIZES ATTACHMENT.
1384 ** . RECALIBRATE
1385 ** .
1386 ** . READ ID'S ON CYL 2 AND CYL 3 PER PARM 1&2 (PARM1 MUST BE ZERO)
1387 ** . COMPARE ID'S READ WITH EXPECTED ID'S
1388 ** . STORE ID COMPARE RESULTS FOR PASS 1
1389 ** . REREAD ALL ID'S ON TRACK 2 AND TRACK 3
1390 ** . COMPARE ID'S READ WITH EXPECTED ID-COMPARE ERROR CTN RESULTS
1391 ** . FROM PASS 1 FOR CONSISTENCY
1392 ** . STORE THREE INFO BYTES FOR MDI
1393 **
1394 ** CALLING SEQUENCE
1395 **
1396 ** PROGRAM PASSES STATUS OF ALL LINES IN FOLLOWING FORMAT:
1397 ** . TURESUL BIT 0---NOT USED
1398 ** . TURESUL BIT 1---UNSAFE
1399 ** . TURESUL BIT 2---NOT USED
1400 ** . TURESUL BIT 3---NOT USED
1401 ** .
1402 ** . TURESUL BIT 4---NOT USED
1403 ** . TURESUL BIT 5---NOT USED
1404 ** . TURESUL BIT 6---NO RECORD FOUND
1405 ** . TURESUL BIT 7---SYNC CHECK OR FILE DATA CHECK
1406 ** .
1407 ** . TURESUL BIT 8---ATTACHMENT BUFFER PARITY CHECK
1408 ** . TURESUL BIT 9---NOT USED
1409 ** . TURESUL BIT 10---ERROR OTHER THAN SYNC OR FILE DATA CHECK
1410 ** . TURESUL BIT 11---FAILURES NOT CONSISTENT
1411 ** .
1412 ** . TURESUL BIT 12---ERRORS ON READ ID - HEAD 0
1413 ** . TURESUL BIT 13---SOLID FAILURE HEAD 0 - READ ID
1414 ** . TURESUL BIT 14---ERRORS ON READ ID - HEAD 1
1415 ** . TURESUL BIT 15---SOLID FAILURE HEAD 1 - READ ID
1416 ** .
1417 ** . TURESUL BIT 16---SOLID FAILURE HEAD 0 (ID MISCOMPARE)
1418 ** . TURESUL BIT 17---SOLID FAILURE HEAD 1 (ID MISCOMPARE)
1419 ** . TURESUL BIT 18---MISCOMPARES ON HEAD 0
1420 ** . TURESUL BIT 19---MISCOMPARES ON HEAD 1
1421 ** .
1422 ** .
1423 ** . TURESUL BIT 20---INTEPRUPT
1424 ** . TURESUL BIT 21---RECAL
1425 ** . TURESUL BIT 22---SEEK
1426 ** . TURESUL BIT 23---NOT USED
1427 ** .
1428 ** . TURESUL BITS 24-31 NOT USED
1429 ** . TURESUL BITS 32-47 CS STATS FOR FAILING OP
1430 **
1431 ** EXITS NORMAL
1432 ** . RETURNS TO MDI SUPERVISOR WHEN DONE.
1433 **
1434 ** EXITS EFROR
1435 ** . RETURNS TO MDI SUPERVISOR.
1436 **
1437 ** RETURN CONTROL
1438 **
1439 ** B TURTN* RETURN TO MDI SUPERVISOR
1440 **
1441 *****
1442 T7850 MVW R7 TURTN SAVE RETURN ADDRESS
1443 MVWI X'7850',STUID SAVE TU ID FOR DISPLAY
1444 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
1445 BAL $CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
1446 DC A($ERR$) ERROR ADRS FOR INVALID PREP
1447 **
1448 MVB CPUID,R0 DETERMINE TYPE OF PROCESSOR
1449 CBI 37,R0 *
1450 JNE T50TC JUMP IF NOT 4955
1451 MVWI X'254C',T50T1+2 LOAD TIME CONSTANT FOR 2 SEC
1452 MVWI X'254C',T50T3+2 LOAD TIME CONSTANT FOR 2 SEC
1453 J T50T2
1454 T50TC MVWI X'0C0E',T50T1+2 (4953) LOAD TIME CONS FOR 2 SEC
1455 MVWI X'0C0E',T50T3+2 LOAD TIME CONSTANT FOR 2 SEC
1456 T50T2 MVWI 0,PASS1 INIT PASS COUNTER
1457 TBTR (R4,B60) INIT CYL 2 FLAG
1458 MVWI 0,HD0SV INIT HEAD 0 SAVE COMP ERR CTR
1459 MVWI 0,HD1SV INIT HEAD 1 SAVE COMP ERR CTR
1460 MVWI 0,ER0SV INIT HEAD 0 SAVE ERR COUNTER
1461 MVWI 0,ER1SV INIT HEAD 1 SAVE ERR COUNTER
1462 MVWZ TURESUL,R2 CLEAR RESULTS WORD
1463 MVWZ TURESUL+2,R2 CLEAR RESULTS WORD

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LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
0030E0	CA25 18CC	1464	MVWZ TURESUL+4,R2	CLEAR RESULTS WORD 2
0030E4	4224 18C8	1465	MVA TURESUL,R2	ADDRESS OF RESULTS
0030E8	4020 3674 0000	1466	T50U MVWI 0,HEAD0	INIT HEAD ZERO MISCOMPARE COUNTER
0030EE	4020 3676 0000	1467	MVWI 0,HEAD1	INIT HEAD ONE MISCOMPARE COUNTER
0030F4	4020 3678 0078	1468	MVWI 120,GDSE0	INIT GOOD SECTOR EQUAL 120
0030FA	4020 367A 0078	1469	MVWI 120,GDSE1	INIT GOOD SECTOR EQUAL 120
003100	4020 367C 0000	1470	MVWI 0,ER00	INIT HEAD 0 ERROR COUNTER
003106	4020 367E 0000	1471	MVWI 0,ER01	INIT HEAD 1 ERROR COUNTER
00310C	4724 3958	1472	MVA IOBLK,R7	SETUP IOBLK
003110	6008	1473	SVC RESET	ISSUE IO RESET
003112	4024 0000	1474	T50T1 MVWI X'0000',R0	TIME OUT 2 SEC
003116	6002	1475	T750 SVC	IDLE
003118	B8FE	1476	JCT T750,R0	*
00311A	6E03 3792	1477	BAL \$RRECL,R6	RECALIBRATE
00311E	39A0	1478	DC A(\$ERR\$)	ERROR
003120	4CA1	1479	TBTR (R4,ER)	INTERRUPT ERROR?
003122	6A00	1480	BON T50AA	YES
003124	4020 3342 0005	1481	MVWI 5,SKDCB	SEEK CONTROL WORD
003126	4020 3590 0002	1482	MVWI 2,SKDCB+2	SEEK TO CYL 2
003132	8038 189A 3596	1483	MVB TUPARM1*,SKDCB+8	SELECT HEAD (PARM1)
003138	6E03 378A	1484	BAL \$SEEK,R6	*
00313C	39A0	1485	DC A(\$ERR\$)	*
00313E	4CA1	1486	TBTR (R4,ER)	INTERRUPT ERROR?
003140	6A00 334E	1487	BON T50BB	YES
003144	4020 356E 200A	1488	MVWI X'200A',RSDCB	RD SECT ID CONTROL WORD
00314A	4020 361C 0000	1489	T50E MVWI 0,LGSEC	SET UP LOG SECT# TO ZERO
003150	6E03 3738	1490	BAL CONVTR,R6	CONVERT SECT # FROM LOGICAL TO PHYS
003154	8028 361F 3572	1491	MVB PHYSC+1,RSDCB+4	LOAD DCB
00315A	6E03 32C8	1492	BAL RDID,R6	READ ID SUBROUTINE
003162	402F 2E26 FFFF	1493	CWI X'FFFF',SCTID	DTD WE READ AN ID INTO STORAGE?
003166	802B 35FE 2E27	1494	T50J T50J	NO-FORCE MISCOMPARE COUNT
00316C	6801 3326	1495	CB ZER00,SCTID+1	FLAG ZERO ?
003170	802B 361D 2E2B	1496	BNE T50A	FLAG NOT ZERO
003176	1809	1497	CB LGSEC+1,SCTID+5	COMPARE SECT # TO EXPECTED #
003178	882B 3590 2E28	1498	JNE T50J	NO - MISCOMPARE
00317E	1805	1499	CW SKDCB+2,SCTID+2	CYL# COMPARE
003180	802B 3596 2E2A	1500	JNE T50J	NO
003186	1801	1501	CB SKDCB+8,SCTID+4	HEAD# COMPARE
003188	500B	1502	JNE T50J	NO
00318A	802B 35FE 3596	1503	J T50H	HEAD 0 ?
003190	1004	1504	T50J CB ZER00,SKDCB+8	YES
003192	4029 3676 0001	1505	T50C J T50C	INC HEAD 1 COUNTER
003198	5003	1506	AWI 1,HEAD1	YES
00319A	4029 3674 0001	1507	J T50B	INC HEAD 0 COUNTER
0031A0	402F 361C 003B	1508	AWI 59,LGSEC	60 SECTORS PEAD ?
0031A6	6800 31B2	1509	T50B BE T50D	YES
0031AA	4029 361C 0001	1510	AWI 1,LGSEC	INC SECT #
0031B0	50CF	1511	J T50E	NO
0031B2	802B 35FE 3596	1512	T50D CB ZER00,SKDCB+8	HEAD 0
0031B8	1813	1513	JNE T50F	NO
0031BA	8028 3591 3597	1514	JNE T50F	NO
0031BC	8028 3590 0000	1515	MVB SKDCB+3,SKDCB+9	SAVE DIFFERENCE
0031C0	8028 3590 0000	1516	MVWI 0,SKDCB+2	NO-OP
0031C6	8028 389C 3596	1517	MVB TUPARM2*,SKDCB+8	SELECT HEAD (PARM2)
0031CC	6E03 378A	1518	BAL \$SEEK,R6	SELECT HEAD
0031D0	39A0	1519	DC A(\$ERR\$)	*
0031D2	4CA1	1520	TBTR (R4,ER)	INTERRUPT ERROR?
0031D4	6A00 334E	1521	BON T50BB	ERROR
0031D8	8028 3597 3591	1522	MVB SKDCB+9,SKDCB+3	RESTORE DIFFERENCE IN SEEK DCB
0031DE	50B5	1523	T50G J	READ ID WITH HEAD ONE
0031E0	4C9C	1524	T50F TBTR (R4,B60)	CYL 2 & 3 READ?
0031E2	1218	1525	JON T50H	YES
0031E4	4724 3958	1526	MVA IOBLK,R7	DEVICE RESET
0031E8	6008	1527	SVC RESET	*
0031EA	4024 0000	1528	T50T3 MVWI X'0000',R0	TIME OUT 2 SEC
0031EE	6002	1529	T7T5 SVC	IDLE
0031F0	B8FE	1530	JCT T7T5,R0	*
0031F2	4C5C	1531	TBTS (R4,B60)	*
0031F4	4020 3590 0001	1532	MVWI 1,SKDCB+2	SET CYL 3 FLAG ON
0031FA	8038 189A 3596	1533	MVB TUPARM1*,SKDCB+8	FWD SEEK TO TPACK 3
003200	6E03 378A	1534	BAL \$SEEK,R6	SELECT HEAD 0 (PARM1)
003204	39A0	1535	DC A(\$ERR\$)	SEEK TO CYL 3
003206	4CA1	1536	TBTR (R4,ER)	ANY ERRORS
003208	6A00 334E	1537	BON T50BB	ERROR
00320C	4020 3590 0003	1538	MVWI 3,SKDCB+2	SET UP FOR CYL 3
003212	502B	1539	J T50G	LOOP
003214	402F 3672 0001	1540	CWI 1,PASS1	PASS - TWO ?
00321A	1045	1541	JE T50L	YES
00321C	402F 367C 0000	1542	CWI 0,ER00	HEAD 0 READ ERROR CTR 0 ?
003222	1006	1543	JE T50L	YES
003224	4A4C	1544	TBTS (R2,12)	SET ERRORS ON RD ID HEAD 0
003226	882B 3678 367C	1545	CW GDSE0,ER00	HEAD 0 RD ERRORS = GOOD SECT CTR ?
00322C	1801	1546	JNE T50L	NO
00322E	4A4D	1547	TBTS (R2,13)	SOLID FAILURE HEAD 0
003230	402F 3674 0000	1548	T50L CWI 0,HEAD0	HEAD 0 MISCOMPARE CTR = 0
003236	1006	1549	JE T50M	NO
003238	4A52	1550	TBTS (R2,18)	MISCOMPARES ON HEAD 0
00324A	882B 3678 3674	1551	CW GDSE0,HEAD0	MISCOMPARES ON HD 0 = GOOD SECT CTR
003244	1891	1552	JNE T50M	NO
003248	4E50	1553	TBTS (R2,16)	SOLID FAILURES ON HEAD 0
00324A	8828 3674 3680	1554	MVW HEAD0,HD0SV	SAVE MISCOMPARE
00324A	8828 367C 3684	1555	MVW ER00,ER0SV	SAVE RD ERRORS
003250	402F 367E 0000	1556	CWI 0,ER01	HEAD 1 RD ERRORS = 0
003256	1006	1557	JE T50N	YES
003258	4A4E	1558	TBTS (R2,14)	ERRORS ON RD ID HEAD 1
00325A	882B 367A 367E	1559	CW GDSE1,ER01	HD 1 RD ERRORS = GOOD SECT CTR
003260	1801	1560	JNE T50N	NO
003262	4A4F	1561	TBTS (R2,15)	SOLID FAILURES HEAD 1
003264	402F 3676 0000	1562	T50N CWI 0,HEAD1	HEAD 1 MISCOMPARE CTR = 0
00326A	1006	1563	JE T50R	YES
00326C	4A53	1564	TBTS (R2,19)	MISCOMPARES ON HEAD 1
00326E	882B 367A 3676	1565	CW GDSE1,HEAD1	MISCOMPARES ON HD1 = GOOD SECT CTR
003274	1801	1566	JNE T50R	NO
003276	4A51	1567	TBTS (R2,17)	SOLID FAILURES HD1 (ID MISCOMPARES)
003278	8828 3676 3682	1568	MVW HEAD1,HD1SV	SAVE MISCOMPARE CTR
00327E	8828 367E 3686	1569	MVW ER01,ER1SV	SAVE MISCOMPARE CTR
003284	402F 3674 0000	1570	CWI 0,HEAD0	MISCOMPARE CTR FOR HD0 = 0
00328A	1808	1571	JNE T50S	NO
00328C	402F 3676 0000	1572	CWI 0,HEAD1	MISCOMPARE CTR FOR HD1 = 0
003292	1804	1573	JNE T50S	NO
003294	802B 35FE 18C9	1574	CB ZER00,TURESUL+1	MDI BYTE 2 = 0
003298	105B	1575	EXIT	EXIT
00329C	4029 3672 0001	1576	AWI 1,PASS1	INC PASS CTR
0032A2	6802 30E8	1577	B T50U	GO EXECUTE PASS 2

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
0032A6	882B 3684 367C	1578	*	*
0032AC	1001	1579	*	*
0032AE	4A4B	1580	T50I CW ER0SV,ER00	HD 0 CTR PASS1 = HD0 CTR PASS2 ?
0032B0	882B 3680 3674	1581	JE T50W	YES
0032B8	1001	1582	TBTS (R2,11)	FAILURES NOT CONSISTENT
0032BA	882B 3686 367E	1583	T50W CW HD0SV,HEAD0	HD0 CTR PASS1 = HD0 CTR PASS2 ?
0032C0	1001	1584	JE T50X	YES
0032C2	4A4B	1585	TBTS (R2,11)	FAILURES NOT CONSISTENT
0032C4	882B 3686 367E	1586	T50X CW ER1SV,ER01	HD1 CTRS PASS1 = HD0 CTRS PASS 2 ?
0032C8	1001	1587	JE T50Y	YES
0032CA	4A4B	1588	TBTS (R2,11)	FAILURES NOT CONSISTENT
0032CC	6802 3352	1589	T50Y B T501	EXIT
0032C8	6E0D 331E	1590	*	*
0032CC	6E03 379A	1591	RDID MVW R6,T500+2	SETUP RETURN ADDRESS
0032D0	39A0	1592	BAL \$RDID,R6	READ ID
0032D2	4CA1	1593	DC A(\$ERR\$)	ERROR
0032D4	1023	1594	TBTR (R4,EP)	NO RECORD FOUND
0032D6	4C33	1595	JOFF T500	YES
0032D8	6800 39A0	1596	TBTR (R4,CSA)	CYCLE STEAL STATS ?
0032DC	882B 2E40 368C	1597	BOFF \$RBUF+2,STATS	ERROR
0032DE	4E24 368C	1598	MVA CSBUF+2,STATS	GET CS STATS
0032E0	4D83	1599	JNE T503	NO RECORD FOUND
0032E2	4D83	1600	TBTR (R5,3)	YES
0032E4	1218	1601	JON T504	UNSAFE
0032E6	4D87	1602	TBTR (R5,7)	UNSAFE
0032E8	1219	1603	JON T502	YES
0032EA	4D81	1604	TBTR (R5,1)	SYNC CHECK
0032EC	1207	1605	JON T503	YES
0032EE	4D88	1606	TBTR (R5,8)	FILE DATA OK ?
0032F0	1205	1607	JON T503	YES
0032F2	4D8E	1608	TBTR (R5,14)	NO
0032F4	1001	1609	JON T504	BUFFER PARITY OK
0032F6	4A48	1610	TBTS (R2,8)	ATTACH BUFFER PARITY
0032FA	4A4A	1611	T504 TBTS (P2,10)	ERROR OTHER THAN SYNC ON FILE D CK
0032FC	5001	1612	J T505	NO
003300	4A47	1613	T503 TBTS (R2,7)	SYNC OR FILE DATA CHECK
003302	402F 3596 0000	1614	T505 CWI 0,SKDCB+8	HEAD 0
003308	1004	1615	JE T506	YES
00330A	4029 367E 0001	1616	AWI 1,ER01	INC HD1 READ ERROR CTR
003310	5005	1617	J T500	RETURN
003312	4029 367C 0001	1618	T506 AWI 1,ER00	INC HD0 READ ERROR CTR
003318	5001	1619	J T500	NO
00331A	4A46	1620	T501 TBTS (R2,6)	NO RECORD FOUND
00331C	6802 0000	1621	T500 B *-*	RETURN TO CALLER
003320	4A41	1622	*	*
003322	6802 3352	1623	T502 TBTS (P2,1)	UNSAFE
003326	402F 3596 0000	1624	E T504	EXIT
00332C	1805	1625	T50A CWI 0,SKDCB+8	USING HEAD 0
00332E	402E 3678 0001	1626	JNE T507	NO
003334	6802 31A0	1627	SWI 1,GDSE0	DEC GOOD SECT CTR (HEAD)
003338	402E 367A 0001	1628	B T50B	NO
00333E	6802 31A0	1629	T507 SWI 1,GDSE1	DEC GOOD SECT CTR (HEAD)
003342	4A55	1630	B T50E	NO
003344	4A54	1631	T50AA TBTS (R2,21)	RECAL
003346	8828 2E40 18CC	1632	T50CC TBTS (R2,20)	INTERRUPT
00334C	5002	1633	MVW CSBUF+2,TURESUL+4	NO
00334E	4A56	1634	J T50T	NO
003350	50F9	1635	T50BB TBTS (R2,22)	SEEK
003352	6802 39F0	1636	J T50C	NO
1637		1637	T50T TXIT	EXIT
1638		1638	T50T B	RETURN TO CALLER
1639		1639	T50T B	RETURN TO CALLER
1640		1640	T50T B	RETURN TO CALLER
1641		1641	T50T B	RETURN TO CALLER
1642		1642	T50T B	RETURN TO CALLER
1643		1643	T50T B	RETURN TO CALLER
1644		1644	T50T B	RETURN TO CALLER
1645		1645	T50T B	RETURN TO CALLER
1646		1646	T50T B	RETURN TO CALLER
1647		1647	T50T B	RETURN TO CALLER
1648		1648	T50T B	RETURN TO CALLER
1649		1649	T50T B	RETURN TO CALLER
1650		1650	T50T B	RETURN TO CALLER
1651		1651	T50T B	RETURN TO CALLER
1652		1652	T50T B	RETURN TO CALLER
1653		1653	T50T B	RETURN TO CALLER
1654		1654	T50T B	RETURN TO CALLER
1655		1655	T50T B	RETURN TO CALLER
1656		1656	T50T B	RETURN TO CALLER
1657		1657	T50T B	RETURN TO CALLER
1658		1658	T50T B	RETURN TO CALLER
1659		1659	T50T B	RETURN TO CALLER
1660		1660	T50T B	RETURN TO CALLER
1661		1661	T50T B	RETURN TO CALLER
1662		1662	T50T B	RETURN TO CALLER
1663		1663	T50T B	RETURN TO CALLER
1664		1664	T50T B	RETURN TO CALLER
1665		1665	T50T B	RETURN TO CALLER
1666		1666	T50T B	RETURN TO CALLER
1667		1667	T50T B	RETURN TO CALLER
1668		1668	T50T B	RETURN TO CALLER
1669		1669	T50T B	RETURN TO CALLER
1670		1670	T50T B	RETURN TO CALLER
1671		1671	T50T B	RETURN TO CALLER
1672		1672	T50T B	RETURN TO CALLER
1673		1673	T50T B	RETURN TO CALL

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
1693**	.	.	.	.
1694**	.	TURESUL BIT 20---RECAL	.	.
1695**	.	TURESUL BIT 21---SEEK	.	.
1696**	.	TURESUL BIT 22---NOT USED	.	.
1698**	.	TURESUL BIT 23---NOT USED	.	.
1699**	.	TURESUL BITS 24-31 NOT USED	.	.
1700**	.	TURESUL BITS 32-47 CS STATS FOR FAILING OP	.	.
1701**	.	.	.	.
1702**	EXITS NORMAL	.	.	.
1703**	.	RETURNS TO MDI SUPERVISOR WHEN DONE.	.	.
1704**	.	.	.	.
1705**	EXITS ERROR	.	.	.
1706**	.	RETURNS TO MDI SUPERVISOR.	.	.
1707**	.	.	.	.
1708**	RETURN CONTROL	.	.	.
1709**	.	.	.	.
1710**	B	TURTN*	RETURN TO MDI SUPERVISOR	.
1711**	.	.	.	.
1712**	*****	*****	*****	*****
003356	6F0D 2E56	7851	MVW R7,TURTN	SAVE RETURN ADDRESS
00335A	4020 2E1E		MVWI X'7851',STUID	SAVE TU ID FOR DISPLAY
003360	4424 2E18		MVA OPTN1,R4	SET UP POINTER ADPS IN R4
003364	6E03 396C		BAL \$CONC,R6	CLEAR DEV DEP STG AND CONNECT I/O BL
003368	39A0		DC A(\$ERR\$)	ERROR ADPS FOR INVALID PREP
1718**	.	.	.	.
1719	MVB	CPUID,R0	DETERMINE TYPE OF PROCESSOR	.
1720	CBI	37,R0	*	.
1721	JNE	T51C	JUMP IF NOT 4955	.
1722	MVWI	X'254C',T51T1+2	LOAD TIME CONSTANT FOR 2 SEC	.
1723	J	T51T2	*	.
1724	T51TC	MVWI X'0C0E',T51T1+2	(4953) LOAD TIME CONS FOR 2 SEC	.
1725	T51T2	MVWZ TURESUL,R2	CLEAR RESULTS WORD	.
1726		MVWZ TURESUL+2,R2	CLEAR RESULTS WORD	.
1727		MVWZ TURESUL+4,R2	CLEAR RESULTS WORD	.
1728	MVA	TURESUL,R2	ADDRESS OF RESULTS	.
1729	MVA	IOBLK,R7	READ DEVICE ID	.
1730	SVC	PID	TEST FOR FIXED HEADS	.
1731	TWI	X'0008',IOMOD+4	*	.
1732	JON	T51Y	FIXED HEADS INSTALLED	.
1733	B	T51Y	NO FIXED HEADS INSTALLED -EXIT	.
1734	T51YY	MVWI 0,PASS1	INIT PASS COUNTER	.
1735		MVWI 0,HDOSV	INIT HEAD 0 SAVE COMP ERR CTR	.
1736		MVWI 0,EROSV	INIT HEAD 0 SAVE ERR COUNTER	.
1737	T51U	MVWI 0,HEAD0	INIT HEAD ZERO MISCOMPARE COUNTER	.
1738		MVWI 60,GDSE0	INIT GOOD SECTOR EQUAL 60	.
1739		MVWI 0,ER00	INIT HEAD 0 ERROR COUNTER	.
1740	MVA	IOBLK,R7	SETUP IOBLK	.
1741	SVC	RESET	ISSUE IO RESET	.
1742	T51T1	MVWI X'0000',R0	TIME OUT 2 SEC	.
1743	SVC	IDLE	*	.
1744	JCT	T751,R0	*	.
1745	BAL	\$RECI,R6	RECALIBRATE	.
1746	DC	A(\$ERR\$)	ERROR	.
1747	TBTR	(R4,ER)	INTERRUPT ERROR?	.
1748	BON	T51AA	YES	.
1749	MVWI	5,SKDCB	SEEK CONTROL WORD	.
1750	MVB	TUPARM1*,SKDCB+8	SELECT HEAD FROM MDI PARM	.
1751	MVWI	302,SKDCB+2	SEEK TO CE TRACK	.
1752	BAL	\$SEK,R6	*	.
1753	DC	A(\$ERR\$)	INTERRUPT ERROR?	.
1754	TBTR	(R4,ER)	YES	.
1755	BON	T51BB	RD SECT ID CONTROL WORD	.
1756	MVWI	X'200A',RSDCB	SET UP LOG SECT# TO ZERO	.
1757	MVWI	0,LGSEC	CONVERT SECT # FROM LOGICAL TO PHYSC	.
1758	T51E	BAL CONVT,R6	LOAD DCB	.
1759	MVB	PHYSC+1,RSDCB+4	READ ID SUBROUTINE	.
1760	BAL	RDID1,R6	FLAG ZERO ?	.
1761	CB	ZEP00,SCTID+1	FLAG NOT ZERO	.
1762	BNE	T51A	COMPARE SECT # TO EXPECTED #	.
1763	CB	LGSEC+1,SCTID+5	NO - MISCOMPARE	.
1764	JNE	T51J	HEAD# COMPARE	.
1765	CB	SKDCB+8,SCTID+4	HEAD# COMPARE	.
1766	JNE	T51J	YES	.
1767	J	T51J	INC HEAD 0 COUNTER	.
1768	AWI	1,HEAD0	60 SECTORS READ ?	.
1769	T51E	JE 5,LGSEC	YES	.
1770	JE	T51H	INC SECT #	.
1771	AWI	1,LGSEC	PASS - TWO ?	.
1772	J	T51E	YES	.
1773	T51H	CWI 1,PASS1	HEAD 0 READ ERROR CTR 0 ?	.
1774	JE	T51I	SET ERRORS ON RD ID HEAD 0	.
1775	CWI	0,EP00	HEAD 0 PD ERRORS = GOOD SECT CTR ?	.
1776	JE	T51L	NO	.
1777	TBTS	(R2,12)	SOLID FAILURE HEAD 0	.
1778	CW	GDSE0,EP00	HEAD 0 MISCOMPARE CTR = 0	.
1779	JNE	T51L	MISCOMPARES ON HEAD 0	.
1780	TBTS	(R2,13)	MISCOMPARES ON HD 0 = GOOD SECT CTR	.
1781	T51L	CWI 0,HEAD0	SOLID FAILURES ON HEAD 0	.
1782	JE	T51H	SAVE MISCOMPARE	.
1783	TBTS	(R2,18)	SAVE RD ERRORS	.
1784	CW	GDSE0,HEAD0	MISCOMPARE CTR FOR HDO = 0	.
1785	JNE	T51H	NO	.
1786	TBTS	(R2,16)	MDI BYTE 2 = 0	.
1787	T51M	MVW HEAD0,HDOSV	EXIT	.
1788	MVW	ER00,EROSV	INC PASS CTR	.
1789	T51R	CWI 0,HEAD0	GO EXECUTE PASS 2	.
1790	JNE	T51S	.	.
1791	CB	ZER00,TURESUL+1	.	.
1792	JE	T51U	.	.
1793	T51S	AWI 1,PASS1	.	.
1794	B	T51U	.	.
1795	*	.	.	.
1796	*	.	.	.
1797	T51I	CW EROSV,ER00	HD 0 CTR PASS1 = HDO CTR PASS2 ?	.
1798	JE	T51W	YES	.
1799	TBTS	(R2,11)	FAILURES NOT CONSISTENT	.
1800	T51W	CW HD0SV,HEAD0	HDO CTR PASS1 = HDO CTR PASS2 ?	.
1801	JE	T51Y	YES	.
1802	TBTS	(R2,11)	FAILURES NOT CONSISTENT	.
1803	*	.	EXIT	.
1804	*	.	.	.
0034B8	6E0D 34FE		R6,T510+2	SETUP RETURN ADDRESS
0034BC	6E03 379A		BAL \$RDID,R6	READ ID

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
0034C0	39A0	1807	DC A(\$ERR\$)	ERROR
0034C2	4CA1	1808	TBTR (R4,ER)	
0034C4	101B	1809	JOFF T510	
0034C6	4CA9	1810	TBTR (R4,CSA)	CYCLE STEAL STATS ?
0034C8	6800 39A0	1811	BOPF \$ERR\$	RETURN
0034CC	8828 2E40 368C	1812	MVW CSBUF+2,STATS	GET CS STATS
0034D2	4524 368C	1813	MVA STATS,R5	
0034D6	4D83	1814	TBTR (R5,3)	NO RECORD FOUND
0034D8	1210	1815	JON T511	YES
0034DA	4D87	1816	TBTR (R5,7)	UNSAFE
0034DE	1211	1817	JON T512	YES
0034E0	4D81	1818	TBTR (R5,1)	SYNC CHECK
0034E2	1207	1819	JON T513	YES
0034E4	4D88	1820	TBTR (R5,8)	FILE DATA OK ?
0034E6	1205	1821	JON T513	YES
0034E8	4D8E	1822	TBTR (R5,14)	NO
0034EA	1001	1823	JOFF T514	BUFFER PARITY OK
0034EC	4A48	1824	TBTS (R2,8)	NO
0034EE	4A4A	1825	T514 TBTS (R2,10)	ATTACH BUFFER PARITY
0034F0	5001	1826	J T516	ERROR OTHER THAN SYNC ON FILE D CK
0034F2	4A47	1827	T513 TBTS (R2,7)	SYNC OR FILE DATA CHECK
0034F4	4029 367C 0001	1828	T516 AWI 1,ER00	INC HDO PEAD ERROP CTR
0034F8	5001	1829	J T510	
0034FA	4A46	1830	T511 TBTS (R2,6)	NO RECORD FOUND
0034FC	6802 0000	1831	T510 B	RETURN TO CALLER
1832	*	1832	*	*
003500	4A41	1833	T512 TBTS (R2,1)	UNSAFE
003502	6802 3520	1834	B T514	EXIT
003506	402E 3678 0001	1835	T51A BWI 1,GDSE0	DEC GOOD SECT CTR (HEAD0)
00350C	6802 343A	1837	B T51B	
003510	4C54	1838	T51AA TBTS (R4,20)	RECAL
003512	4C53	1839	T51CC TBTS (R4,19)	INTERRUPT
003514	8828 2E40 18CC	1840	MVW CSBUF+2,TURESUL+4	
00351A	5002	1841	J T51T	EXIT
00351C	4C55	1842	T51BB TBTS (R4,21)	SEEK
00351E	50F9	1843	J T51CC	
1844	T51T	TXIT	EXIT	
1845	T51T	B \$CONX	RETURN TO MDI CONTROLLER	
1846	*****	*****	*****	*****
1847	*	1847	*	*
1848	COPY	T7872	01DEC76	
1849	*****	*****	*****	*****
1850	*	1850	*	*
1851	*T7872	1851	*	*
1852	*	1852	THIS TU INHIBITS INTEPFRPT	12/01/76*
1853	*	1853	CALLING ROUTINE LOOPS ON T72A	*
1854	*****	*****	*****	*****
003524	6F0D 2E56	0020	T7872 MVW R7,TURTN	SAVE RETURN ADDRESS
003528	4020 395C		MVWI X'0020',IODCB	PREP TO LEVEL 2 WITH THE 'I' BIT OFF
00352E	4724 3958		MVA IOBLK,R7	*
003532	600C		SVC PREP	*
003534	5002		J T72B	*
003536	6F0D 2E56		T72A MVW R7,TURTN	SAVE RETURN ADDRESS
00353A	6802 39F0		T72B B	EXIT
1862	*	1862	*	*
1864	COPY	T78DCB	01DEC76	
1865	** (T78DCB)	1865	*	*
1866	*****	*****	*****	*****
1867	*	1867	*	*
1868	DCB TABLES AND DC'S	1868	*	*
1869	*****	*****	*****	*****
1870	*****	*****	*****	*****
1871	*****	*****	*****	*****
1872	*****	*****	*****	*****
1873	*****	*****	*****	*****
1874	DGDCB	DC X'2008'	DIAGNOSTIC DCB	
1875	DC	X'0000'	NOT USED	
1876	DC	A(*-*)	0-7 = PHYSICAL SECTOR # MINUS ONE	
1877	DC	X'0000'	NOT USED	
1878	DC	X'0000'	NOT USED	
1879	DC	A(*-*)	CHAINING ADDRESS	
1880	DC	X'0100'	BYTE COUNT	
1881	DC	A(*-*)	DATA ADDRESS	
1882	*	1882	*	*
1883	*	1883	*	*
1884	*****	*****	*****	*****
1885	*****	*****	*****	*****
1886	*****	*****	*****	*****
1887	*****	*****	*****	*****
1888	*****	*****	*****	*****
1889	*****	*****	*****	*****
1890	*****	*****	*****	*****
1891	*****	*****	*****	*****
1892	*****	*****	*****	*****
1893	*****	*****	*****	*****
1894	*****	*****	*****	*****
1895	*****	*****	*****	*****
1896	*****	*****	*****	*****
1897	*****	*****	*****	*****
1898	*****	*****	*****	*****
1899	*****	*****	*****	*****
1900	*	1900	*	*
1901	RSDCB	DC X'200A'	READ SECTOR ID	
1902	DC	X'0000'	NOT USED	
1903	DC	X'0000'	0-7 = PHYSICAL SECTOR # MINUS ONE	
1904	DC	X'0000'	NOT USED	
1905	DC	X'0000'	NOT USED	
1906	DC	X'0000'	CHAIN ADDRESS	
1907	DC	X'0006'	BYTE COUNT FOR READ SECTOR ID	
1908	DC	A(SCTID)	SECTOR ID DATA ADDRESS	
1909	*	1909	*	*
1910	*	1910	*	*
1911	*****	*****	*****	*****
1912	*****	*****	*****	*****
1913	RIDCB	DC X'200E'	READ SECTOR ID	
1914	DC	X'0000'	NOT USED	
1915	DC	X'0000'	NOT USED	
1916	DC	X'0000'	NOT USED	
1917	DC	X'0000'	NOT USED	
1918	DC	A(*-*)	CHAIN ADDRESS	
1919	DC	X'0006'	BYTE COUNT FOR PEAD SECTOR ID	
1920	DC	A(SCTID)	SECTOR ID DATA ADDRESS	
1921	*	1921	*	*
1922	*	1922	*	*

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1923	****	SEEK DCB	*****	
1924	*			
00358E	0005	1925	SKDCB DC X'0005'	SEEK DCB
003590	0000	1926	DC X'0000'	BIT 0-3=0;BIT4=DIRECTION;5-15=DIFFER
003592	0000	1927	DC F'0'	
003594	0000	1928	DC F'0'	
003596	0000	1929	DC X'0000'	0-7 = HEAD;8-15 NOT USED
003598	0000	1930	DC A(*-*)	CHAIN ADDRESS
00359A	0000	1931	DC F'0'	NOT USED
00359C	0000	1932	DC F'0'	NOT USED
1933	*			
1934	****	CYCLE STEAL STATUS DCB	*****	
1935	*			
00359E	2000	1936	CSDCB DC X'2000'	CONTROL WORD
0035A0	0000	1937	DC F'0'	NOT USED
0035A2	0000	1938	DC F'0'	NOT USED
0035A4	0000	1939	DC F'0'	NOT USED
0035A6	0000	1940	DC F'0'	NOT USED
0035A8	0000	1941	DC F'0'	NOT USED
0035AA	0008	1942	DC X'0008'	4 WORDS OF STATS
0035AC	2E3E	1943	DC A(CSEUF)	ADDRESS OF CYCLE STEAL STATUS DATA
1944	*			
1945	****	WRITE DCB	*****	
1946	*			
0035AE	0001	1947	WRDCB DC X'0001'	WRITE CONTROL WORD
0035B0	0000	1948	DC F'0'	NOT USED
0035B2	0000	1949	DC X'0000'	0-7=0;8-15 = FLAG BYTE
0035B4	0000	1950	DC X'0000'	SEARCH ARGUMENT CYLINDER
0035B6	0000	1951	DC X'0000'	SEARCH ARGUMENT HEAD-SECTOR
0035B8	0000	1952	DC A(*-*)	CHAIN ADDRESS
0035BA	0000	1953	DC F'0'	BYTE COUNT
0035BC	0000	1954	DC A(*-*)	WRITE DATA ADDRESS
1955	*			
1956	****	VERIFY DCB	*****	
1957	*			
0035BE	200C	1958	VRDCB DC X'200C'	CONTROL WORD
0035C0	0000	1959	DC F'0'	NOT USED
0035C2	0000	1960	DC X'0000'	0-7=0;8-15 = FLAG BYTE
0035C4	0000	1961	DC X'0000'	CYLINDER
0035C6	0000	1962	DC X'0000'	HEAD - SECTOR
0035C8	0000	1963	DC A(*-*)	CHAIN ADDRESS
0035CA	0000	1964	DC F'0'	BYTE COUNT
0035CC	0000	1965	DC A(*-*)	VERIFY DATA ADDRESS
1966	*			
1967	****	READ DCB	*****	
1968	*			
0035CE	2009	1969	RDDCB DC X'2009'	READ DCB CONTROL WORD
0035D0	0000	1970	DC F'0'	NOT USED
0035D2	0000	1971	DC X'0000'	0-7=0,8-15 = FLAG BYTE
0035D4	0000	1972	DC X'0000'	SEARCH ARGUMENT CYLINDER
0035D6	0101	1973	DC X'0101'	SEARCH ARGUMENT H-R
0035D8	0000	1974	DC A(*-*)	CHAIN ADDRESS
0035DA	0000	1975	DC F'0'	BYTE COUNT
0035DC	0000	1976	DC A(*-*)	READ DATA ADDRESS
1977	*			
1978	****	WRITE SECTOR ID SKEWED	****	
1979	*			
0035DE	0003	1980	WKDCB DC X'0003'	CONTROL WORD
0035E0	0000	1981	DC X'0000'	NOT USED
0035E2	0000	1982	DC A(*-*)	0-7 = PHYSICAL SECTOR # MINUS ONE
0035E4	0000	1983	DC A(*-*)	NOT USED
0035E6	0000	1984	DC A(*-*)	NOT USED
0035E8	0000	1985	DC A(*-*)	CHAIN ADDRESS
0035EA	0006	1986	DC X'0006'	BYTE COUNT
0035EC	3624	1987	DC A(WRSID)	ADDR OF SECTOR ID DATA
1988	*			
1989	****	READ SECTOR ID SKEWED	****	
1990	*			
0035EE	200B	1991	RKDCB DC X'200B'	CONTROL WORD
0035F0	0000	1992	DC X'0000'	NOT USED
0035F2	0000	1993	DC X'0000'	0-7 = PHYSICAL SECTOR # MINUS ONE
0035F4	0000	1994	DC X'0000'	NOT USED
0035F6	0000	1995	DC X'0000'	NOT USED
0035F8	0000	1996	DC A(*-*)	CHAIN ADDRESS
0035FA	0006	1997	DC X'0006'	BYTE COUNT FOR READ SECTOR ID
0035FC	2E26	1998	DC A(SCTID)	SECTOR ID DATA ADDRESS
1999	*			
2000	*	CONSTANTS AND DEFINED STORAGE LOCATIONS		
0035FE	0000	2001	ZER0 DC X'0000'	CONSTANT ZERO
003600	0001	2002	ONE1 DC X'0001'	CONSTANT ONE
003602	00000000	2003	TIMEOUT DC 2A(*-*)	TIMEOUT COUNTER
003604	0000	2004	TOPE DC X'0000'	CONSTANT FOR ADD DOUBLF
003606	0001	2005	DC X'0001'	*
003608	0500	2006	COUNT DC F'1280'	BYTE COUNT (1280)
00360C	0000	2007	DIFF DC A(*-*)	SEEK DIFFERENCE
00360E	0000	2008	XXX DC A(*-*)	WORK WORD INT TO ZERO
003610	0000	2009	BCNT DC X'0000'	BYTE COUNT
003612	0000	2010	JOE DC A(*-*)	WRITE PARAMETER POINTER
003614	0000	2011	JOE1 DC A(*-*)	SAVE LOC FOR PARM LIST ADDRESS
003616	DEB6	2012	WDATA DC X'DEB6'	WRITE DATA
003618	6EBE	2013	DC X'6EBE'	*
00361A	0000	2014	TABLE DC A(*-*)	ADDR OF WRT PAR LIST FOR FORMAT RTNS
00361C	0000	2015	LGSEC DC X'0000'	LOGICAL SECTOR #
00361E	0000	2016	PHYS DC X'0000'	CONVERTED PHYSICAL SEC #
003620	1D00	2017	CB29 DC X'1D00'	CONSTANT BYTE 29
003622	3B00	2018	FIVE9 DC X'3B00'	CONSTANT BYTE 59
003624	0000	2019	WRSID DC X'0000'	FLAG,CYLINDER (WRT SECTOR ID DATA)
003626	0000	2020	DC X'0000'	CYLINDER,HEAD
003628	0000	2021	DC X'0000'	LOG SECTOR,NOT USED
00362A	00FF	2022	CDAT DC X'00FF'	INVALID DATA CONSTANT
00362C	FF34	2023	WSIDT DC X'FF34'	WRITE SECTOR ID TEST DATA
00362E	5678	2024	DC X'5678'	*
003630	9A00	2025	DC X'9A00'	*
003632	0000	2026	SCTST DC X'0000'	FEAD SECTOR ID TEST DATA BUFFER
003634	0000	2027	DC X'0000'	*
003636	0000	2028	DC X'0000'	*
003638	0000	2029	CTR01 DC X'0000'	COUNTER
00363A	0000	2030	CTR02 DC X'0000'	COUNTER
00363C	0000	2031	CTR03 DC X'0000'	COUNTER
00363E	0000	2032	CTR04 DC X'0000'	COUNTER
003640	0000	2033	CTR05 DC X'0000'	COUNTER
003642	0000	2034	CTR06 DC X'0000'	COUNTER
003644	0000	2035	SAVR3 DC X'0000'	SAVE AREA
003646	0000	2036	SAVR5 DC X'0000'	SAVE AREA

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
003648	0000	2037	WR2 DC X'0000'	
00364A	0000	2038	SVSEK DC X'0000'	
00364C	0000	2039	LCT DC X'0000'	
00364E	0000	2040	T56AA DC X'0000'	
003650	0000	2041	T56BB DC X'0000'	
003652	0000	2042	T56CC DC X'0000'	
003654	0000	2043	T56DD DC X'0000'	
003656	0000	2044	T56EE DC X'0000'	
003658	0000	2045	T56FFF DC X'0000'	
00365A	0000	2046	T56GG DC X'0000'	
00365C	0000	2047	T86AA DC X'0000'	
00365E	0000	2048	T86BB DC X'0000'	
003660	0000	2049	T86CC DC X'0000'	
003662	0000	2050	T86DD DC X'0000'	
003664	0000	2051	T86EE DC X'0000'	
003666	0000	2052	T86FFF DC X'0000'	
003668	0000	2053	T86GG DC X'0000'	
00366A	0000	2054	T41D DC X'0000'	
00366C	0000	2055	T41LP DC X'0000'	
00366E	0000	2056	WRLOC DC X'0000'	
003670	0000	2057	CYLOC DC X'0000'	
003672	0000	2058	PASS1 DC A(*-*)	
003674	0000	2059	HEAD0 DC A(*-*)	
003676	0000	2060	HEAD1 DC A(*-*)	
003678	0000	2061	GBSE0 DC A(*-*)	
00367A	0000	2062	GDSE1 DC A(*-*)	
00367C	0000	2063	ER00 DC A(*-*)	
00367E	0000	2064	ER01 DC A(*-*)	
003680	0000	2065	HD0SV DC A(*-*)	
003682	0000	2066	HD1SV DC A(*-*)	
003684	0000	2067	ER0SV DC A(*-*)	
003686	0000	2068	ER1SV DC A(*-*)	
003688	0000	2069	PATTR DC A(*-*)	
00368A	0000	2070	CECYL DC A(*-*)	
00368C	0000	2071	STATS DC A(*-*)	
2072	*			
2074	**	COPY T78DPCIO	01DEC76	
2075	**	(T78DPCIO)		
2076	**			2/07/77
2077	*	EXECUTE DPC INPUT/OUTPUT COMMANDS		
2078	*	THIS ROUTINE HAS THE FOLLOWING ENTRIES:		
2079	*			
2080	* 1	BAL CEOP1,R6	CE DIAGNOSTIC OP1(TURN ON DIAG MODE)	
2081	* 2	BAL CEOP2,R6	WRITE DIAG CLOCK STEP DATA	
2082	* 3	BAL SENS0,R6	CE READ SENSE WORD ZERO	
2083	* 4	BAL SENS1,R6	CE READ SENSE WORD ONE	
2084	* 5	BAL WRAP,R6	READ DIAGNOSTIC WRAP	
2085	*	BXS (R6,2)	RETURN	
2090	*			
2091	*			
2092	*	*****		
2093	*	CE DIAGNOSTIC OP2 DATA WORD (CLOCK STEP)		
2094	*			
2095	*	BIT 00 - SET READY		
2096	*	BIT 01 - RESET READY		
2097	*	BIT 02 - SET WRITE CLOCK		
2098	*	BIT 03 - SET READ CLOCK		
2099	*	BIT 04 - INDEX PULSE		
2100	*	BIT 05 - SECTOR PULSE		
2101	*	BIT 06 - STANDARD READ DATA		
2102	*	BIT 07 - SPEED PULSE		
2103	*	BIT 08 - BEHIND HOME		
2104	*	BIT 09 - SET SEEK COMPLETE		
2105	*	BIT 10 - RESET SEEK COMPLETE		
2106	*	BIT 11 - PLO OUT OF SYNC		
2107	*	BIT 12 - RST RD/WRT CLOCK		
2108	*	BIT 13 -		
2109	*	BIT 14 -		
2110	*	BIT 15 - RESET DIAGNOSTIC MODE		
2111	*			
2112	*	*****		
2113	*	*****		
2114	*			
2115	*			
00368E	6E0D 2E24	2116	WRAP MVB R6,LSTIO	SAVE ADDRESS OF LAST IO
003692	8028 19D0 3711	2117	MVB DEVADD,IDCBRAP+1	LOAD DEVICE ADDRESS IN IDCB
003698	680C 3710	2118	IO IDCBRAP	READ SENSE WORD 1
00369C	6F05 36F2	2119	BNCC 7,CCERR	CHECK COND CODE
0036A0	5601	2120	BXS (R6,2)	RETURN TO CALLER
2121	*			
0036A2	6E0D 2E24	2122	CEOP1 MVB R6,LSTIO	SAVE ADDRESS OF LAST IO
0036A6	8028 19D0 3709	2123	MVB DEVADD,IDCBCE1+1	LOAD DEVICE ADDRESS IN IDCB
0036AC	680C 3708	2124	IO IDCBCE1	SET DIAGNOSTIC MODE
0036B0	6F05 36F2	2125	BNCC 7,CCERR	CHECK COND CODE
0036B4	5601	2126	BXS (R6,2)	RETURN TO CALLER
2127	*			
0036B6	6E0D 2E24	2128	CEOP2 MVB R6,LSTIO	SAVE ADDRESS OF LAST IO
0036BA	8028 19D0 370D	2129	MVB DEVADD,IDCBCE2+1	LOAD DEVICE ADDRESS IN IDCB
0036BE	680C 370C	2130	IO IDCBCE2	WRITE DIAG CLOCK STEP
0036C4	6F05 36F2	2131	BNCC 7,CCERR	CHECK COND CODE
0036C8	5601	2132	BXS (R6,2)	RETURN TO CALLER
2133	*			
0036CA	6E0D 2E24	2134	SENS1 MVB R6,LSTIO	SAVE ADDRESS OF LAST IO
0036CE	8028 19D0 3705	2135	MVB DEVADD,IDCB1+1	LOAD DEVICE ADDRESS IN IDCB
0036D4	680C 3704	2136	IO IDCB1	READ SENSE WORD 2
0036D8	6F05 36F2	2137	BNCC 7,CCERR	CHECK COND CODE
0036DC	5601	2138	BXS (R6,2)	RETURN TO CALLER
2139	*			
0036DE	6E0D 2E24	2140	SENS0 MVB R6,LSTIO	SAVE ADDRESS OF LAST IO
0036E2	8028 19D0 3701	2141	MVB DEVADD,IDCB0+1	LOAD DEVICE ADDRESS IN IDCB
0036E8	680C 3700	2142	IO IDCB0	READ SENSE WORD 1
0036EC	6F05 36F2	2143	BNCC 7,CCERR	CHECK COND CODE
0036F0	5601	2144	BXS (R6,2)	RETURN TO CALLER
2145	*			
0036F2	706E	2147	CCERR DC X'706E'	COPY STATUS ANY LEVEL INTO R3
0036F4	336A	2148	SRL 13,R3	POSITION CC CODE TO BITS 13-15
0036F6	C328 2E20	2149	MVB R3,\$TOIN	* PUT IN LOG AREA
0036FA	68D2 0000	2150	B (R6,2)	RETURN TO USER
2151	*			

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
0036FE 6F05 2152 IORST DC X'6F05' RESPT IO
003700 2205 2153 IDCB0 DC X'2205' SENSE WORD ZERO
003702 0000 2154 RDATA0 DC A(*-*) DATA WORD
003704 2105 2155 IDCB1 DC X'2105' SENSE WORD ONE
003706 0000 2156 RDATA1 DC A(*-*)
003708 4005 2157 IDCBCE1 DC X'4005' CE DIAG OP1
00370A 0000 2158 CEDAT DC A(*-*) SENSE DATA
00370C 4105 2159 IDCBCE2 DC X'4105' CE DIAG OP2
00370E 0000 2160 CEDAT2 DC A(*-*) SENSE DATA
003710 2F05 2161 IDCERRAP DC X'2F05' READ DIAG WRAP
003712 0000 2162 RAPDAT DC A(*-*) SENSE DATA
000232 2163 CPUID EQU X'0232' CPU ID
2164 *
2166 ** COPY T7810 01DEC76
2167 ** (T7810)
2169 *****12/01/76*****
2170 * SUBROUTINE
2171 *
2172 * PURPOSE
2173 *
2174 * COMPARE READ SECTOR ID DATA TO WRITE SECTOR ID DATA
2175 * NORMAL AND TEST DATA.
2176 *
2177 * CALLING SEQUENCE
2178 *
2179 * BAL CMPRW,R6 (NORMAL)
2180 * BAL CMPRT,R6 (TEST)
2181 *
2182 * RETURN
2183 *
2184 * BXS (R6,2) - NORMAL
2185 *
2186 *****
2187 *
2188 *
2189 * CMPRT MVWI 5,R7 BYTE COUNT
2190 * MVA SCTST+1,R3 ADDR OF RD SECT ID DATA (TEST)
2191 * MVA WSIDT,R5 ADDR OF WR SECT ID DATA (TEST)
2192 * J TT47
2193 *
2194 * CMPRW MVWI 5,R7 COMPARE BYTE COUNT
2195 * MVA SCTID+1,R3 ADDR OF RD SEC ID DATA
2196 * MVA WRSID,R5 ADDR OF WR SEC ID DATA
2197 * TT4Y CFNEN (R3),(R5) COMPARE ID DATA
2198 * BE (R6,2) BCH IF WRITE ID DATA OK
2199 * B (R6,*) COMPARE ERROR
2200 *
2201 *****
2202 * SUBROUTINE
2203 *
2204 * PURPOSE
2205 * CONVERT LOGICAL SECTOR NUMBER TO A PHYSICAL SECTOR MINUS
2206 * ONE
2207 * SETUP LOGICAL SECTOR # IN LOCATION 'LGSEC'
2208 * PHYSICAL SECTOR # WILL BE LOADED IN LOCATION 'PHYS'
2209 *
2210 * LOGICAL SECTOR# TO PHYSICAL SECTOR# CONVERSION
2211 * LOGICAL- X 00, 1E, 01, 1F, 02, 20, 03, 21, 04, 22, 05, 23, 06, 24,
2212 * PHYSICAL X 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D,
2213 *
2214 * LOGICAL- 07, 25, 08, 26, 09, 27, 0A, 28, 0E, 29, 0C, 2A, 0D, 2B,
2215 * PHYSICAL 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B,
2216 *
2217 * LOGICAL- 0E, 2C, 0F, 2D, 10, 2E, 11, 2F, 12, 30, 13, 31, 14, 32,
2218 * PHYSICAL 1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29,
2219 *
2220 * LOGICAL- 15, 33, 16, 34, 17, 35, 18, 36, 19, 37, 1A, 38, 1B, 39,
2221 * PHYSICAL 2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37,
2222 *
2223 * LOGICAL- 1C, 3A, 1D, 3B, X
2224 * PHYSICAL 38, 39, 3A, 3B, X
2225 *
2226 *
2227 * CALLING SEQUENCE
2228 *
2229 * BAL CONVT,R6
2230 *
2231 * RETURN
2232 *
2233 * B (TT304+2)
2234 *
2235 *****
2236 *
2237 * CONVT MVW R6,TT304+2 SETUP RETURN ADDR
2238 * CB ZERO,LGSEC+1 CK FOR LOG # ZERO
2239 * CE TT303 BCH IF LOG # IS ZERO
2240 * CB LGSEC+1,CB29 COMP LOG TO 29
2241 * JGE RTT01 BCH IF LGSEC EQ OR LESS THAN CB29
2242 * MVWI 2,R0 SETUP MULTIPLIER
2243 * MB LGSEC+1,R0 LOG SECTOR # TIMES 2
2244 * SWI 60,R0 LOG SEC TIMES 2 MINUS 60
2245 * MVB R0,PHYS+1 PHYSICAL SECTOR NUMBER
2246 * J TT304 RETURN TO CALLER
2247 * TT303 MVB FIVES,PHYS+1 PHYSICAL SECTOR # 59
2248 * J TT304 RETURN TO CALLER
2249 * RTT01 MVWI 2,R0 LOAD MULTIPLIER
2250 * MB LGSEC+1,R0 LOG SECTOR # TIMES 2
2251 * SWI 1,R0 SUBTRACT ONE
2252 * MVB R0,PHYS+1 LOAD PHYSICAL SECTOR #
2253 * TT304 B *-# RETURN TO CALLER
2254 *
2255 *****
2256 * SUBROUTINE
2257 *
2258 * PURPOSE
2259 *
2260 * LOAD WRITE SECTOR ID DATA BUFFER FROM RD SEC ID BUFFER
2261 *
2262 * CALLING SEQUENCE
2263 *
2264 * BAL LWSID,R6
2265 *
2266 *

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2267 * RETURN
2268 *
2269 * BXS (R6)
2270 *
2271 *****
2272 *
2273 *
2274 * LWSID MVWI 5,R7 BYTE COUNT
2275 * MVA SCTID+1,R3 ADDR OF RD SECT ID DATA BUFFER
2276 * MVA WRSID,R5 ADDR OF WR SECT ID DATA BUFFER
2277 * MVFN (R3),(R5) MOV DATA FROM RD TO WR BUFFER
2278 * BXS (R6) RETURN TO CALLER
2279 *
2280 *
2281 * EXECUTE INPUT & OUTPUT COMMANDS
2282 * TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
2283 * EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
2284 * LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
2285 * SUPVR CALL.
2286 *
2287 *
2288 * THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
2289 *
2290 * 1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
2291 * 2. ERROR INTERRUPTS RECEIVED FROM SUPVR
2292 *
2293 *
2294 * THIS ROUTINE HAS THE FOLLOWING ENTRIES:
2295 *
2296 * 1 BAL $RKEW,R6 READ SECTOR ID SKEWED
2297 * 2 BAL $WKST,R6 WRITE SECTOR ID SKEWED (TEST)
2298 * 3 BAL $RWST,R6 READ SECTOR ID SKEWED (TEST)
2299 * 4 BAL $RIDS,R6 READ SECTOR ID (TEST)
2300 * 5 BAL $NKEW,R6 WRITE SECTOR ID SKEWED
2301 * 6 BAL $WSEC,R6 WRITE SECTOR ID
2302 * 7 BAL $WSTS,R6 WRITE SECTOR ID (TEST)
2303 * 8 BAL $DIAG,R6 DIAGNOSTIC
2304 * 9 BAL $XOCS,R6 CYCLE STEAL STATUS
2305 * 10 BAL $SSEEK,F6 SEEK
2306 * 11 BAL $RECL,R6 RECALIBRATE
2307 * 12 BAL $RDID,R6 READ SECTOR ID
2308 * 13 BAL $RD,R6 READ
2309 * 14 BAL $RDVY,R6 READ VERIFY
2310 * 15 BAL $WRT,R6 WRITE
2311 *
2312 *
2313 * SSEEK MVA SKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2314 * J XIO
2315 *
2316 * SRECL MVA CIDCB,IODCB SET UP BLOCK FOR SVC CALL
2317 * J XIO
2318 *
2319 * SRDID MVA RSDCB,IODCB SET UP BLOCK FOR SVC CALL
2320 * MVBI X'FFF',R3 SET BUFFER TO F'S
2321 * MVA SCTID,R5 SETUP READ SECTOR ID BUFFER ADRS
2322 * MVWI 6,R7 SETUP BUFFER LENGTH
2323 * FFN R3,(R5) INIT READ SECTOR ID BUFFER
2324 * MVA SCTID,RSDCB+14 DATA ADDR
2325 * J XIO
2326 *
2327 * SRD MVBI X'FFF',R3 SETRD BUFFER TO ALL F'S
2328 * MVA RDDCB+14,R5 SET UP READ BUFFER ADRS
2329 * MVWI X'0100',R7 SET UP BUFFER LENGTH
2330 * FFN R3,(R5) CLEAR READ BUFFER
2331 * MVA RDDCB,IODCB SET UP BLOCK FOR SVC CALL
2332 * J XIO
2333 *
2334 * SRDVY MVA VRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2335 * J XIO
2336 *
2337 * SWRT MVA WRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2338 * J XIO
2339 *
2340 * SRKEW MVA RKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2341 * MVBI X'FFF',R3 SET BUFFER TO F'S
2342 * MVA SCTID,R5 SETUP READ SECTOR ID BUFFER ADRS
2343 * MVWI 6,R7 SETUP BUFFER LENGTH
2344 * FFN R3,(R5) INIT READ SECTOR ID BUFFER
2345 * MVA SCTID,RKDCB+14 DATA ADDR
2346 * J XIO
2347 *
2348 * SWKST MVA WKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2349 * MVA WSIDT,WKDCB+14 DATA ADDR
2350 * J XIO
2351 *
2352 * SWRST MVA RKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2353 * MVA SCTST,RKDCB+14 DATA ADDR
2354 * J XIO
2355 *
2356 * SRIDS MVA RSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2357 * MVBI X'FFF',R3 SET BUFFER TO F'S
2358 * MVA SCTST,R5 SETUP READ SECTOR ID BUFFER ADRS
2359 * MVWI 6,R7 SETUP BUFFER LENGTH
2360 * FFN R3,(R5) INIT READ SECTOR ID BUFFER
2361 * MVA SCTID,RSDCB+14 DATA ADDR
2362 * J XIO
2363 *
2364 * SWKST MVA WKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2365 * MVA WRSID,WKDCB+14 DATA ADDR
2366 * J XIO
2367 *
2368 * SWSTS MVA RKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2369 * MVA SCTST,RKDCB+14 DATA ADDR
2370 * J XIO
2371 *
2372 * SWSEC MVA RSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2373 * MVBI X'FFF',R3 SET BUFFER TO F'S
2374 * MVA SCTST,R5 SETUP READ SECTOR ID BUFFER ADRS
2375 * MVWI 6,R7 SETUP BUFFER LENGTH
2376 * FFN R3,(R5) INIT READ SECTOR ID BUFFER
2377 * MVA SCTID,RSDCB+14 DATA ADDR
2378 * J XIO
2379 *
2380 * SWSEEK MVA WRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2381 * MVA WRSID,WKDCB+14 DATA ADDR
2382 * J XIO
2383 *
2384 * SWSEC MVA WSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2385 * J XIO
2386 *

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
00383C 4020 356C 3624 2382 MVA WRSID,WSDCB+14 DATA ADDR
003842 500B 2383 J XIO
003844 4020 395C 355E 2384 SWSTS MVA WSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
00384A 4020 356C 362C 2385 MVA WSIDT,WSDCB+14 DATA ADDR
003850 5004 2386 J XIO
003852 4020 395C 353E 2387 *
003858 5000 2388 \$DIAG MVA DGDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2389 J XIO
2390 XEQIT
2391+*****29JUL76**
2392+
2393+ SUB-ROUTINE
2394+
2395+ EXECUTE INPUT AND OUTPUT COMMANDS
2396+
2397+ PURPOSE
2398+
2399+ TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
2400+ THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
2401+
2402+ 1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
2403+ THE I/O COMMAND.
2404+ 2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
2405+ ISSUED BY THIS SUBROUTINE.
2406+ 3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
2407+ START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
2408+ 4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
2409+ SINCE THE LAST EXPECTED INTERRUPT IF AN INTERRUPT IS FOUND,
2410+ MYSTERY INTERRUPT (MI) CONTROL BIT IS SET.
2411+ 5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
2412+ EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC START'.
2413+ 6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
2414+ STARTS TO DETERMINE A LOST INTERRUPT.
2415+ 7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
2416+ WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
2417+ 8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
2418+ 9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
2419+ 10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
2420+ 11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
2421+ 12. CHECK TO A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
2422+ ISSUED BY THIS SUBROUTINE.
2423+ 13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
2424+ CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
2425+ COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
2426+
2427+ CALLING SEQUENCE
2428+
2429+ THIS ROUTINE HAS THE FOLLOWING ENTRIES:
2430+
2431+ --> BAL XIO OR XEQ ANY CYCLE STEAL COMMAND, MOD=0
2432+ --> BAL XIO1 MOD PARM PRELOADED IN 'IOMOD'
2433+ --> BAL XIOCS,R6 OR XIO START CYCLE STEAL STATUS, MOD=XIO
2434+ --> BAL XIOCS-4,R6 AUTO CS STATUS (FOLLOWING OTHER XIO
2435+ . AND DOES NOT POST INTERRUPT STATUS)
2436+
2437+ RETURN CONTROL
2438+
2439+ OR BXS (R6,2) RETURN TO USER NO ERROR
2440+ (R6,1) RETURN AND RETRY ON ERROR
2441+ *****
2442+ XIO MVWZ IOMOD,R3 SET HOF OF 0 FOR CYCLE STEAL OP
2443+ J XIO1 CS I/O'S ARE NOT RETRIED
2444+
2445+
2446+ TBTR (R4,CE) RESET CS STATUS INTER ERROR INDICAT.
2447+ TBTS (R4,CS) SET 'CYCLE STEAL STATUS' IN PROGRESS
2448+ XIOCS MVA CSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2449+ MVWI X'000F',IOMOD SET CYCLE STEAL MODIFIER
2450+ TBTR (R4,CS) IS CS IN PROGRESS, ERROR CONDITION
2451+ JON XIO2 * YES, BYPASS SAVING I/O ADRS
2452+ XIO1 MVA R6,ISTIO SAVE IAR FOR RETRY IF REQUESTED
2453+ MVA DCBUP,R3 SET UP TO ADRS TO MOVE DCB TABLE
2454+ MVWZ IODCB,R5 * AND THE FROM ADRS ALONG WITH
2455+ MVEI 16,R7 * THE NUMBER OF MOVES
2456+ MVFI (R5),R3 MOVE 1 STATUS WORD AND ADJUST
2457+ NVEI 255,R3 CLEAR CYCLE STATUS BUFFER
2458+ MVA CSDCB,R5 * TO ALL ONES *
2459+ NVEI 16,R7 *
2460+ FFN R3,(R5) *
2461+ MVWI X'0708',SIOIN OVERLAY OLD CONDITION CODES
2462+ MVWZ \$ISB,R3 ZERO OUT OLD ISB VALUE
2463+
2464+ TBTR (R4,ER) RESET ANY ERROR BEFORE I/O COMMAND
2465+ TBTR (R4,IN) CLEAR INTERRUPT RECEIVED CNTL BIT
2466+ MVA IOBLK,R7 SET UP CONTROL BLOCK FOR SUPVR
2467+ TBTR (R4,SLE) RESET LEVEL ERROR INDICATOR
2468+ TBTS (R4,MI) SET EXPECTED INTR CONTROL BIT
2469+ SVC START CALL SUPVR FOR I/O COMMAND
2470+
2471+ TBTR (R4,NI) IS AN INTR EXPECTED
2472+ BN (R6,2) * NO, RETURN TO USER
2473+
2474+ THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
2475+
2476+ MVBI X'00',R5 SET UP WORK REG FOR 'LOST INTR'
2477+ XIO8 TBTR (R4,IN) HAS INTERRUPT BEEN RECEIVED
2478+ JON XIOCK * YES, CHECK IF ALL WAS SATISFACTORY
2479+ SVC IDLE ADVN ANOTHER PROGRAM A CHANCE TO RUN
2480+
2481+ AWI 1,R5 SUPVR WILL RETURN HERE
2482+ JNZ XIO8 ADVANCE TIME OUT COUNT
2483+ TBTS (R4,ER) BCH IF TIME OUT NOT REACHED
2484+ B (R6,1) SET ON ERROR CONTROL BIT
2485+ *****ERR 'NO INTERRUPT'*****
2486+ *****03FEB76**
2487+
2488+ SUBROUTINE
2489+
2490+ I/O EXECUTE ERROR HANDLING ROUTINE
2491+
2492+ PURPOSE
2493+
2494+ THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
2495+ PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
2496+ SUPERVISOR AND IT WAS NOT ACCEPTED.
2497+

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2498+ CALLING SEQUENCE
2499+
2500+ SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
2501+
2502+ RETURN CONTROL
2503+
2504+ B (R6)* RETURN TO USERS ERROR HANDLER
2505+
2506+ *****
2507+
2508+ CC 0= DEVICE NOT ATTACHED
2509+ FOR 1= DEVICE BUSY
2510+ I/O 2= DEVICE BUSY AFTER RESET
2511+ 3= COMMAND REJECT
2512+ 4= INTERVENTION REQUIRED
2513+ 5= INTERFACE DATA CHECK
2514+ 6= CONTROLLER BUSY
2515+ 7= I/O COMMAND EXCEPTED
2516+
2517+ XIOER DC X'706E' COPY STATUS ANY LEVEL INTO R3
2518+ SRL 13,R3 POSITION CC CODE TO BITS 13-15
2519+ MVB R3,SIOIN * PUT IN LOG OUT AREA
2520+ B (R6)* RETURN TO USER ERROR HANDLER
2521+ *****14APR76**
2522+
2523+
2524+ SUB-ROUTINE
2525+
2526+ ERROR INTERRUPT RUNS ON INTERRUPT LEVEL 'SINTL'
2527+
2528+ PURPOSE
2529+
2530+ THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR
2531+ OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE
2532+ EXPECTED CODE.
2533+
2534+ CALLING SEQUENCE
2535+
2536+ SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT
2537+
2538+ RETURN CONTROL
2539+
2540+ SVC EXIT RETURN TO USER VIA SUPVR
2541+
2542+ *****
2543+
2544+ CC 0= CONTROLLER END ISB 0= ADD STATUS
2545+ FOR 1= PROGRAM CONTROL INTERRUPT BITS 1= COMD REJECT
2546+ INTR 2= EXCEPTION INTERRUPT FOR 2= INCOR LENGTH
2547+ 3= DEVICE END INTERRUPT INTR 3= DCB SPEC CK
2548+ 4= ATTENTION INTERRUPT 4= STG DATA CK
2549+ 5= ATTENTION / PROGRAM CNTL INTR 5= INV STG ADRS
2550+ 6= ATTENTION / EXCEPTION INTR 6= PROFRCT CK
2551+ 7= ATTENTION / DEVICE END INTR 7= I-FACE DATA
2552+
2553+ INTER DC X'706E' COPY STATUS ANY LEVEL INTO R3
2554+ SRL 13,R3 POSITION INDICATORS IN R3
2555+ MVA OEPN1,R4 SET UP BASE ADRS
2556+ TBTR (R4,CS) IS CS IN PROGRESS
2557+ JOFF INTES * NO
2558+ TBTS (R4,CE) TURN ON CYCLE STEAL INTER ERROR
2559+ MVWZ R3,CSTL8 SAVE CS ERR ISB VALUE, BITS 0-7
2560+ MVB R7,CSTL8+1 * AND THE COND CODE
2561+ INTR1
2562+ INTES TBTR (R4,XE) TEST EXPECTED ATTEM / EPROR IND
2563+ JOFF INTET BCH IF NOT EXPECTED
2564+ CBI 4,R3 IS THIS AN 'ATTENTION' INTR
2565+ JE INTR1 * YES, BCH TO END INTR SEQUENCE
2566+ INTET TBTS (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
2567+ J INTR1
2568+
2569+ THE ERROR INTERRUPT USES THE SAME
2570+ ENDING SEQUENCE AS THE NORMAL INTR
2571+ *****14APR76**
2572+
2573+ SOUBROUTINE
2574+
2575+ OKAY INTERRUPT RUNS ON INTERRUPT LEVEL 'SINTL'
2576+
2577+ PURPOSE
2578+
2579+ TO CHECK THE INTERRUPT AND CONTINUE THE TEST
2580+
2581+ CALLING SEQUENCE
2582+
2583+ SUPERVISOR WILL ENTER HERE IF INTR CC IS AS REQUESTED
2584+ THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE
2585+ AFTER THE SPECIAL PART HAS BEEN COMPLETED AND THE
2586+ COMMON SECTION IS HANDLED HERE.
2587+
2588+ RETURN CONTROL
2589+
2590+ SVC EXIT RETURN TO USER VIA SUPVR
2591+
2592+ *****
2593+ INTOK DC X'706E' COPY STATUS ANY LEVEL INTO R3
2594+ SRL 13,R3 POSITION INDICATORS IN R3
2595+ MVA OEPN1,R4 SET UP BASE ADRS
2596+ INTR1 TBTR (R4,CS) SET INTERRUPT RECEIVED
2597+ JON INTR2 IS 'CS' IN PROGRESS' ON
2598+ 1204 * YES, BCH AROUND UPDATE
2599+ MVB R3,SIOIN+1 SAVE INTERRUPTING CC CODE
2600+ MVWZ R7,SISB SAVE INTR STATUS AND DEV ADRS
2601+ INTR2 EQU *
2602+ CPCL R5 CURRENT LEVEL COPIED BY DCP
2603+ SLL 4,R5 POSITION INTR LEVEL AND PUT
2604+ ABI 1,R5 * IN 'I' BIT
2605+ CW \$INTL,R5 IS THIS THE CORRECT INTR LEVEL
2606+ JE INTR3 * YES, GO EXIT THIS LEVEL
2607+ TBTS (R4,SLE) SET INTR LEVEL ERROR CONTROL BIT
2608+ TBTR (R4,XI) SET ERROR ON I/O COMMAND CNTL BIT
2609+ INTR3 TBTR (R4,XI) WAS INTERRUPT EXPECTED
2610+ JON INTR4 * YES, EXIT OFF THIS INTR LEVEL
2611+ TBTS (R4,MI) * NO, SET MYSTERY INTR CONTROL BIT
2612+ CBI 4,R3 ATTENTION INTERRUPT?
2613+ JE INTRX YES
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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
00391E 4C5C
003920 600E
2614+ TETS (R4,NG)          ERROR,UNEXPECTED INTERRUPT  IL
2615+INTRX SVC EXIT        EXIT THIS LEVEL VIA SUPVR TO PGM  IL
2617+*****03FEB76**
2618+
2619+ THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT
2620+ HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
2621+ RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
2622+
2623+
003922 4C5C 0002
003923 4C5C
003924 4C5C
003925 4C5C
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003927 4C5C
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003929 4C5C
003930 4C5C
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004000 4C5C

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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
0039AC 0D03
0039AE 4324 181A
0039B2 6B0D 3B02
0039B6 4124 3A32
0039BA 0F04
0039BC 0E08
0039BE 2B24
0039C0 0F04
0039C2 0A40
0039C4 C258
0039C6 BEFB
0039C8 0E08
0039CA 7921 002C
0039CB BDF7
0039CD 4020 1802 F1F0
0039D6 4020 19B8 3B08
0039DC 4020 19BA 3B04
0039E2 402C 19C4 0080
0039E4 4324 2E1E
0039EC 6F13 18BA
0039F0
0039F4 C720 19D0
0039F6 6812 2E56
0039FA 0007
0039FC 0008
0039FE 5C5C40C1C2D6D9E3
003A06 0028
003A08 E3E4C9C440C9D6C9D
003A30 0028
003A32 4040404040404040
003A5A 0028
003A5C C3D5E3D340C4C3C2F
003A84 0028
003A86 4040404040404040
003AAE 0028
003AB0 D9E2C9C440C3E260F
003AB8 0028
003ADA 4040404040404040
003B02 0000
003B04 39FA
003B06 0101
003B08 0101
00F1F0
000080
003B0A 0030
003B0C 2E1E
003B0E 181A
000000
2731+SPRNT MVB I 3 R5
2732+ MVA B3 BUFPT
2733+ MVA B3 BUFPT
2734+ MVA LINE1,R1
2735+ MVB I 4 R7
2736+ MVB I 8 R6
2737+MVBUF MVB I (R3), (R1)
2738+ MVB I 4 R7
2739+ MVB I X'40',R2
2740+ MVB R2,(R1)+
2741+ JCT MVBUF,R6
2742+ MVB I 8 R6
2743+ MVB I 4 R7
2744+ JCT MVBUF,R5
2745+ MVA PIDMS10,PID+2
2746+ MVA FAKETU,DCADD1
2747+ MVA DC2PT,DCADD2
2748+ OWI BIT0080,SUPSTAT
2749+ MVA STUID,R3
2750+ BAL TUMSG4TR*,R7
2751+
2752+SCONX EQU *
2753+ MVB DEVADD,R7
2754+ SVC RIBC
2755+ B TURTN*
2756+
2757+BEGIN DC A(0007)
2758+ DC A(0008)
2759+ DC C'***ABORT'
2760+ DC A(0040)
2761+ DC C'TUID IOIN ISB INST
2762+ DC A(0040)
2763+LINE1 DC C'
2764+ DC A(0040)
2765+ DC C'CNTRL DCB2 DCB3 DCB4
2766+ DC A(0040)
2767+LINE2 DC C'
2768+ DC A(0040)
2769+ DC C'RSID CS-2 CS-3 CS-4
2770+ DC A(0040)
2771+LINE3 DC C'
2772+
2773+BUFPT DC A(*-*)
2774+DC2PT DC A(BEGIN)
2775+FIXTU DC X'0101'
2776+FAKETU DC X'0101'
2777+PIDMSG10 EQU X'F1F0'
2778+BIT0080 EQU X'0080'
2779+
2780+ DATA CONTROL PLOCK FOR CONVERTING HEX TO EBCDIC
2781+
2782+HEBLK DC A(48)
2783+ DC A(STUID)
2784+ DC A(TUWORK)
2785+ END

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
0	.R0.	ABSOLUTE. HEX VALUE(00000000) 1205 1206 1212 1214 1308 1309 1317 1319 1448 1449 1474 1476 1528 1530 1719 1720 1742 1744 2242 2243 2244 2245 2249 2250 2251 2252
0	.R1.	ABSOLUTE. HEX VALUE(00000001) 2734 2737 2740 2743
0	.R2.	ABSOLUTE. HEX VALUE(00000002) 1133 1134 1150 1155 1157 1159 1161 1320 1321 1322 1333 1336 1339 1342 1348 1349 1360 1366 1462 1463 1464 1465 1544 1547 1550 1553 1558 1562 1564 1567 1582 1585 1588 1610 1611 1613 1620 1624 1632 1633 1636 1725 1726 1727 1728 1777 1780 1783 1786 1799 1802 1824 1825 1827 1830 1834 2739 2740
0	.R3.	ABSOLUTE. HEX VALUE(00000003) 1352 2148 2149 2190 2194 2196 2275 2277 2333 2336 2340 2343 2354 2357 2370 2373 2443 2453 2456 2457 2460 2462 2518 2519 2554 2560 2564 2594 2599 2612 2642 2687 2689 2690 2698 2732 2733 2737 2749
0	.R4.	ABSOLUTE. HEX VALUE(00000004) 1068 1129 1200 1217 1224 1232 1304 1325 1327 1356 1444 1457 1479 1486 1520 1524 1531 1536 1594 1596 1715 1747 1754 1808 1810 1838 1839 1842 2446 2447 2450 2464 2465 2467 2468 2471 2477 2483 2555 2556 2558 2562 2566 2595 2596 2597 2607 2608 2609 2611 2614 2624 2626 2628 2631 2633
0	.R5.	ABSOLUTE. HEX VALUE(00000005) 1330 1331 1334 1337 1340 1343 1344 1345 1599 1600 1602 1604 1606 1608 1813 1814 1816 1818 1820 1822 2191 2195 2196 2276 2277 2334 2336 2340 2343 2355 2357 2371 2373 2454 2456 2458 2460 2472 2474 2603 2604 2605 2636 2688 2689 2731 2744
0	.R6.	ABSOLUTE. HEX VALUE(00000006) 1069 1074 1078 1130 1201 1215 1222 1228 1230 1305 1323 1354 1362 1445 1477 1484 1490 1492 1518 1534 1591 1592 1716 1745 1752 1758 1760 1805 1806 2116 2120 2122 2126 2128 2132 2135 2139 2141 2145 2150 2197 2198 2237 2278 2452 2472 2484 2520 2625 2630 2632 2638 2641 2643 2693 2699 2701 2736 2741 2742
0	.R7.	ABSOLUTE. HEX VALUE(00000007) 930 1066 1127 1135 1137 1198 1204 1302 1315 1442 1472 1526 1713 1729 1740 1855 1857 1860 2189 2192 2274 2335 2342 2356 2372 2455 2459 2466 2559 2600 2686 2691 2696 2729 2735 2738 2750 2753
2686	\$CONC	ADDRESS. HEX LOCATION(0000396C) IN CSECT(I7840) LENGTH(2)
2752	\$CONX	ADDRESS. HEX LOCATION(000039F0) IN CSECT(I7840) LENGTH(1)
2728	\$ERR\$	ADDRESS. HEX LOCATION(000039A0) IN CSECT(I7840) LENGTH(6) 1131 1149 1202 1216 1218 1223 1225 1231 1239 1306 1328 1353 1355 1357 1363 1446 1478 1485 1519 1535 1593 1597 1717 1746 1753 1807 1811
919	\$INTL	ADDRESS. HEX LOCATION(00002E54) IN CSECT(I7840) LENGTH(2)
889	\$IOIN	ADDRESS. HEX LOCATION(00002E20) IN CSECT(I7840) LENGTH(2)
890	\$ISB	ADDRESS. HEX LOCATION(00002E22) IN CSECT(I7840) LENGTH(2)
874	\$LE	ABSOLUTE. HEX VALUE(00000026) 2467 2607
2332	\$PDI	ADDRESS. HEX LOCATION(0000379A) IN CSECT(I7840) LENGTH(6)
2329	\$RECL	ADDRESS. HEX LOCATION(00003792) IN CSECT(I7840) LENGTH(6)
2326	\$SEEK	ADDRESS. HEX LOCATION(0000378A) IN CSECT(I7840) LENGTH(6)
888	\$TUID	ADDRESS. HEX LOCATION(00002E1E) IN CSECT(I7840) LENGTH(2)
105	@CADD1	ADDRESS. HEX LOCATION(000019B8) IN CSECT(I7840) LENGTH(1)
106	@CADD2	ADDRESS. HEX LOCATION(000019BA) IN CSECT(I7840) LENGTH(1)
42	@PIXT	ABSOLUTE. HEX VALUE(00000101) 474 480 483 504 510 513 543 549 575 633 636
44	@GOTO	ABSOLUTE. HEX VALUE(00000200) 552 569 578 618
49	@NVL	ABSOLUTE. HEX VALUE(00000600) 567 593 616
41	@QUES	ABSOLUTE. HEX VALUE(00000100) 477 507 540 546
47	@QUXX	ABSOLUTE. HEX VALUE(00000400) 456 465 486 495 558 584 607 624
48	@TUXX	ABSOLUTE. HEX VALUE(00000500) 432 444 516 528 595
2757	BEGIN	ADDRESS. HEX LOCATION(000039FA) IN CSECT(I7840) LENGTH(2)
2778	BIT0080	ABSOLUTE. HEX VALUE(00000080) 2748
2773	BUFPT	ADDRESS. HEX LOCATION(00003B02) IN CSECT(I7840) LENGTH(2)
849	B60	ABSOLUTE. HEX VALUE(0000001C) 1457 1524 1531
2017	CB29	ADDRESS. HEX LOCATION(00003620) IN CSECT(I7840) LENGTH(2)
2147	CCERR	ADDRESS. HEX LOCATION(000036F2) IN CSECT(I7840) LENGTH(2)
878	CE	ABSOLUTE. HEX VALUE(0000002A) 2446 2558 2628
958	CICB	ABSOLUTE. HEX VALUE(00000014) 2692
1886	CLDCB	ADDRESS. HEX LOCATION(0000354E) IN CSECT(I7840) LENGTH(2)
2237	CONVT	ADDRESS. HEX LOCATION(00003738) IN CSECT(I7840) LENGTH(4)
2163	CPUID	ABSOLUTE. HEX VALUE(00000232) 1228 1490 1758

CROSS-REFERENCE LISTING

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
876	CS	1205 1308 1448 1719 ABSOLUTE. HEX VALUE(00000028) 2447 2450 2556 2597 2626
877	CSA	ABSOLUTE. HEX VALUE(00000029) 1327 1596 1810 2631
907	CSBUF	ADDRESS. HEX LOCATION(00002E3E) IN CSECT(I7840) LENGTH(1) 1329 1350 1358 1598 1634 1812 1840 1943 2458
1936	CSDCB	ADDRESS. HEX LOCATION(0000359E) IN CSECT(I7840) LENGTH(2)
915	CSTL8	ADDRESS. HEX LOCATION(00002E4C) IN CSECT(I7840) LENGTH(2)
897	DCBUF	ADDRESS. HEX LOCATION(00002E2E) IN CSECT(I7840) LENGTH(1)
2774	DC2PT	ADDRESS. HEX LOCATION(00003B04) IN CSECT(I7840) LENGTH(2)
108	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I7840) LENGTH(1) 922 1314 2117 2123 2129 2136 2142 2647 2656 2753
892	DEV1	ADDRESS. HEX LOCATION(00002E26) IN CSECT(I7840) LENGTH(2)
1874	DGDCB	ADDRESS. HEX LOCATION(0000353E) IN CSECT(I7840) LENGTH(2)
70	DUMMY	ABSOLUTE. HEX VALUE(00000000) 423 638 653
639	ENTPT	ADDRESS. HEX LOCATION(000026DC) IN CSECT(I7840) LENGTH(1)
50	EQ	ABSOLUTE. HEX VALUE(00000000) 598
869	ER	ABSOLUTE. HEX VALUE(00000021) 1217 1224 1232 1325 1356 1479 1486 1520 1536 1594 1747 1754 1808 2464 2483 2566 2608 2633
2067	EROSV	ADDRESS. HEX LOCATION(00003684) IN CSECT(I7840) LENGTH(2)
2063	ER00	ADDRESS. HEX LOCATION(0000367C) IN CSECT(I7840) LENGTH(2) 1460 1555 1580 1736 1788 1797 1470 1542 1545 1555 1580 1618 1739 1775 1778 1788 1797 1828
2064	ER01	ADDRESS. HEX LOCATION(0000367E) IN CSECT(I7840) LENGTH(2)
2068	ER1SV	ADDRESS. HEX LOCATION(00003686) IN CSECT(I7840) LENGTH(2)
944	EXIT	ABSOLUTE. HEX VALUE(00000006) 1461 1569 1586
2776	FAKETU	ADDRESS. HEX LOCATION(00003F08) IN CSECT(I7840) LENGTH(2)
2018	FIVE9	ADDRESS. HEX LOCATION(00003622) IN CSECT(I7840) LENGTH(2)
767	F00014	ADDRESS. HEX LOCATION(00002BEA) IN CSECT(I7840) LENGTH(1)
661	F00079	ADDRESS. HEX LOCATION(000026E6) IN CSECT(I7840) LENGTH(1)
685	F00088	ADDRESS. HEX LOCATION(00002834) IN CSECT(I7840) LENGTH(1)
691	F00090	ADDRESS. HEX LOCATION(00002864) IN CSECT(I7840) LENGTH(1)
709	F00116	ADDRESS. HEX LOCATION(00002942) IN CSECT(I7840) LENGTH(1)
735	F00125	ADDRESS. HEX LOCATION(00002A94) IN CSECT(I7840) LENGTH(1)
741	F00127	ADDRESS. HEX LOCATION(00002AC4) IN CSECT(I7840) LENGTH(1)
759	F00142	ADDRESS. HEX LOCATION(00002BA2) IN CSECT(I7840) LENGTH(1)
771	F00151	ADDRESS. HEX LOCATION(00002C02) IN CSECT(I7840) LENGTH(1)
779	F00179	ADDRESS. HEX LOCATION(00002C30) IN CSECT(I7840) LENGTH(1)
783	F00182	ADDRESS. HEX LOCATION(00002C36) IN CSECT(I7840) LENGTH(1)
795	F00216	ADDRESS. HEX LOCATION(00002C84) IN CSECT(I7840) LENGTH(1)
799	F00236	ADDRESS. HEX LOCATION(00002C8A) IN CSECT(I7840) LENGTH(1)
805	F00239	ADDRESS. HEX LOCATION(00002CB8) IN CSECT(I7840) LENGTH(1)
791	F00242	ADDRESS. HEX LOCATION(00002C7E) IN CSECT(I7840) LENGTH(1)
2061	GDSE0	ADDRESS. HEX LOCATION(00003678) IN CSECT(I7840) LENGTH(2)
2062	GDSE1	ADDRESS. HEX LOCATION(0000367A) IN CSECT(I7840) LENGTH(2)
2065	HDOSV	ADDRESS. HEX LOCATION(00003680) IN CSECT(I7840) LENGTH(2)
2066	HD1SV	ADDRESS. HEX LOCATION(00003682) IN CSECT(I7840) LENGTH(2)
2059	HEAD0	ADDRESS. HEX LOCATION(00003674) IN CSECT(I7840) LENGTH(2) 1459 1568 1466 1508 1548 1551 1554 1570 1583 1737 1768 1781 1784 1787 1789 1800
2060	HEAD1	ADDRESS. HEX LOCATION(00003676) IN CSECT(I7840) LENGTH(2)
2782	HEBLK	ADDRESS. HEX LOCATION(00003B0A) IN CSECT(I7840) LENGTH(2) 1467 1506 1562 1565 1568 1572
964	HTEO	ABSOLUTE. HEX VALUE(0000001A) 2729 2730
2157	IDCBC1	ADDRESS. HEX LOCATION(00003708) IN CSECT(I7840) LENGTH(2)
2159	IDCBC2	ADDRESS. HEX LOCATION(0000370C) IN CSECT(I7840) LENGTH(2)
2161	IDCBRAP	ADDRESS. HEX LOCATION(00003710) IN CSECT(I7840) LENGTH(2)
2153	IDCB0	ADDRESS. HEX LOCATION(00003700) IN CSECT(I7840) LENGTH(2)
2155	IDCB1	ADDRESS. HEX LOCATION(00003704) IN CSECT(I7840) LENGTH(2)
940	IDLE	ABSOLUTE. HEX VALUE(00000002) 1213 1318 1475 1529 1743 2479
871	IN	ABSOLUTE. HEX VALUE(00000023) 2465 2477 2596
2656	INTBL	ADDRESS. HEX LOCATION(00003964) IN CSECT(I7840) LENGTH(2)
2553	INTER	ADDRESS. HEX LOCATION(000038CC) IN CSECT(I7840) LENGTH(2) 2658

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
2562	INTES	ADDRESS. HEX LOCATION(000038E4) IN CSECT(I7840) LENGTH(2)
2566	INTET	ADDRESS. HEX LOCATION(000038EC) IN CSECT(I7840) LENGTH(2)
2593	INTOK	ADDRESS. HEX LOCATION(000038F0) IN CSECT(I7840) LENGTH(2)
66	INTRNL	ABSOLUTE. HEX VALUE(00000000)
2615	INTRX	ADDRESS. HEX LOCATION(00003920) IN CSECT(I7840) LENGTH(2)
2596	INTR1	ADDRESS. HEX LOCATION(000038F8) IN CSECT(I7840) LENGTH(2)
2601	INTR2	ADDRESS. HEX LOCATION(00003906) IN CSECT(I7840) LENGTH(1)
2609	INTR3	ADDRESS. HEX LOCATION(00003914) IN CSECT(I7840) LENGTH(2)
2647	IOBLK	ADDRESS. HEX LOCATION(00003958) IN CSECT(I7840) LENGTH(2)
2649	IODCB	ADDRESS. HEX LOCATION(0000395C) IN CSECT(I7840) LENGTH(2)
2650	IOMOD	ADDRESS. HEX LOCATION(0000395E) IN CSECT(I7840) LENGTH(2)
40	I7840	CSECT. START(00002500) LENGTH(5648) ESDID(0)
2015	LGSEC	ADDRESS. HEX LOCATION(0000361C) IN CSECT(I7840) LENGTH(2)
2763	LINE1	ADDRESS. HEX LOCATION(00003A32) IN CSECT(I7840) LENGTH(40)
891	LSTIO	ADDRESS. HEX LOCATION(00002E24) IN CSECT(I7840) LENGTH(2)
868	MI	ABSOLUTE. HEX VALUE(00000020)
2737	MVBUF	ADDRESS. HEX LOCATION(000039BE) IN CSECT(I7840) LENGTH(2)
62	MX	ABSOLUTE. HEX VALUE(00000204)
880	NG	ABSOLUTE. HEX VALUE(0000002C)
875	NI	ABSOLUTE. HEX VALUE(00000027)
432	N00001	ADDRESS. HEX LOCATION(00002590) IN CSECT(I7840) LENGTH(2)
444	N00002	ADDRESS. HEX LOCATION(000025A2) IN CSECT(I7840) LENGTH(2)
456	N00003	ADDRESS. HEX LOCATION(000025B4) IN CSECT(I7840) LENGTH(2)
465	N00004	ADDRESS. HEX LOCATION(000025C2) IN CSECT(I7840) LENGTH(2)
474	N00005	ADDRESS. HEX LOCATION(000025D0) IN CSECT(I7840) LENGTH(2)
477	N00006	ADDRESS. HEX LOCATION(000025D4) IN CSECT(I7840) LENGTH(2)
480	N00007	ADDRESS. HEX LOCATION(000025D8) IN CSECT(I7840) LENGTH(2)
483	N00008	ADDRESS. HEX LOCATION(000025DC) IN CSECT(I7840) LENGTH(2)
486	N00009	ADDRESS. HEX LOCATION(000025E0) IN CSECT(I7840) LENGTH(2)
495	N00010	ADDRESS. HEX LOCATION(000025EE) IN CSECT(I7840) LENGTH(2)
504	N00011	ADDRESS. HEX LOCATION(000025FC) IN CSECT(I7840) LENGTH(2)
507	N00012	ADDRESS. HEX LOCATION(00002600) IN CSECT(I7840) LENGTH(2)
510	N00013	ADDRESS. HEX LOCATION(00002604) IN CSECT(I7840) LENGTH(2)
513	N00014	ADDRESS. HEX LOCATION(00002608) IN CSECT(I7840) LENGTH(2)
516	N00015	ADDRESS. HEX LOCATION(0000260C) IN CSECT(I7840) LENGTH(2)
528	N00016	ADDRESS. HEX LOCATION(00002624) IN CSECT(I7840) LENGTH(2)
540	N00017	ADDRESS. HEX LOCATION(00002638) IN CSECT(I7840) LENGTH(2)
543	N00018	ADDRESS. HEX LOCATION(0000263C) IN CSECT(I7840) LENGTH(2)
546	N00019	ADDRESS. HEX LOCATION(00002640) IN CSECT(I7840) LENGTH(2)
549	N00020	ADDRESS. HEX LOCATION(00002644) IN CSECT(I7840) LENGTH(2)
552	N00021	ADDRESS. HEX LOCATION(00002648) IN CSECT(I7840) LENGTH(2)
558	N00022	ADDRESS. HEX LOCATION(00002654) IN CSECT(I7840) LENGTH(2)
567	N00023	ADDRESS. HEX LOCATION(00002662) IN CSECT(I7840) LENGTH(2)
569	N00024	ADDRESS. HEX LOCATION(00002664) IN CSECT(I7840) LENGTH(2)
575	N00025	ADDRESS. HEX LOCATION(00002670) IN CSECT(I7840) LENGTH(2)
578	N00026	ADDRESS. HEX LOCATION(00002674) IN CSECT(I7840) LENGTH(2)
584	N00027	ADDRESS. HEX LOCATION(00002680) IN CSECT(I7840) LENGTH(2)
593	N00028	ADDRESS. HEX LOCATION(0000268E) IN CSECT(I7840) LENGTH(2)
595	N00029	ADDRESS. HEX LOCATION(00002690) IN CSECT(I7840) LENGTH(2)
607	N00030	ADDRESS. HEX LOCATION(000026A8) IN CSECT(I7840) LENGTH(2)
616	N00031	ADDRESS. HEX LOCATION(000026B6) IN CSECT(I7840) LENGTH(2)
618	N00032	ADDRESS. HEX LOCATION(000026B8) IN CSECT(I7840) LENGTH(2)
624	N00033	ADDRESS. HEX LOCATION(000026C4) IN CSECT(I7840) LENGTH(2)
633	N00034	ADDRESS. HEX LOCATION(000026D2) IN CSECT(I7840) LENGTH(2)

CROSS-REFEPENCE LISTING

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
636	N00035	ADDRESS. HEX LOCATION(000026D6) IN CSECT(I7840) LENGTH(2)
60	ON	ABSOLUTE. HEX VALUE(00000200)
833	OPTN1	ADDRESS. HEX LOCATION(00002E18) IN CSECT(I7840) LENGTH(2)
856	OPTN3	ADDRESS. HEX LOCATION(00002E1C) IN CSECT(I7840) LENGTH(2)
104	PARNARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I7840) LENGTH(1)
2058	PASS1	ADDRESS. HEX LOCATION(00003672) IN CSECT(I7840) LENGTH(2)
2016	PHYSC	ADDRESS. HEX LOCATION(0000361E) IN CSECT(I7840) LENGTH(2)
72	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I7840) LENGTH(1)
2777	PIDMSG10	ABSOLUTE. HEX VALUE(00001F0)
950	PREP	ABSOLUTE. HEX VALUE(0000000C)
2156	RDATA	ADDRESS. HEX LOCATION(00003706) IN CSECT(I7840) LENGTH(2)
1969	RDDCB	ADDRESS. HEX LOCATION(000035CE) IN CSECT(I7840) LENGTH(2)
1591	RDID	ADDRESS. HEX LOCATION(000032C8) IN CSECT(I7840) LENGTH(4)
1805	RDI01	ADDRESS. HEX LOCATION(000034B8) IN CSECT(I7840) LENGTH(4)
946	RESET	ABSOLUTE. HEX VALUE(00000008)
957	RICB	ABSOLUTE. HEX VALUE(00000013)
947	RID	ABSOLUTE. HEX VALUE(00000009)
1991	RKDCB	ADDRESS. HEX LOCATION(000035EE) IN CSECT(I7840) LENGTH(2)
1901	RSDCB	ADDRESS. HEX LOCATION(0000356E) IN CSECT(I7840) LENGTH(2)
2249	RTT01	ADDRESS. HEX LOCATION(00003766) IN CSECT(I7840) LENGTH(4)
896	SCTID	ADDRESS. HEX LOCATION(00002E26) IN CSECT(I7840) LENGTH(2)
2026	SCTST	ADDRESS. HEX LOCATION(00003632) IN CSECT(I7840) LENGTH(2)
2135	SENS1	ADDRESS. HEX LOCATION(000036CA) IN CSECT(I7840) LENGTH(4)
1925	SKDCB	ADDRESS. HEX LOCATION(0000358E) IN CSECT(I7840) LENGTH(2)
948	START	ABSOLUTE. HEX VALUE(0000000A)
2071	STATS	ADDRESS. HEX LOCATION(0000368C) IN CSECT(I7840) LENGTH(2)
107	SUPSTAT	ADDRESS. HEX LOCATION(000019C4) IN CSECT(I7840) LENGTH(1)
1081	S16E	ADDRESS. HEX LOCATION(00002E9E) IN CSECT(I7840) LENGTH(4)
1228	S20B	ADDRESS. HEX LOCATION(00002F7A) IN CSECT(I7840) LENGTH(4)
1238	S20C	ADDRESS. HEX LOCATION(00002FA0) IN CSECT(I7840) LENGTH(6)
1243	S20D	ADDRESS. HEX LOCATION(00002FB2) IN CSECT(I7840) LENGTH(4)
1213	TO720	ADDRESS. HEX LOCATION(00002F40) IN CSECT(I7840) LENGTH(2)
1076	TS16L	ADDRESS. HEX LOCATION(00002E8C) IN CSECT(I7840) LENGTH(6)
1529	TT5	ADDRESS. HEX LOCATION(000031EE) IN CSECT(I7840) LENGTH(2)
2247	TT303	ADDRESS. HEX LOCATION(0000375E) IN CSECT(I7840) LENGTH(6)
2253	TT304	ADDRESS. HEX LOCATION(00003776) IN CSECT(I7840) LENGTH(4)
2196	TT4Y	ADDRESS. HEX LOCATION(0000372F) IN CSECT(I7840) LENGTH(2)
95	TUMSGWTR	ADDRESS. HEX LOCATION(000018BA) IN CSECT(I7840) LENGTH(1)
79	TUPARM1	ADDRESS. HEX LOCATION(0000189A) IN CSECT(I7840) LENGTH(1)
80	TUPARM2	ADDRESS. HEX LOCATION(0000189C) IN CSECT(I7840) LENGTH(1)
101	TURESUL	ADDRESS. HEX LOCATION(000018C8) IN CSECT(I7840) LENGTH(1)
920	TURTN	ADDRESS. HEX LOCATION(00002E56) IN CSECT(I7840) LENGTH(2)
77	TUSTATUS	ADDRESS. HEX LOCATION(00001818) IN CSECT(I7840) LENGTH(1)
78	TUWORK	ADDRESS. HEX LOCATION(0000181A) IN CSECT(I7840) LENGTH(1)
1150	T12A	ADDRESS. HEX LOCATION(00002EF6) IN CSECT(I7840) LENGTH(2)
1155	T12B	ADDRESS. HEX LOCATION(00002EFC) IN CSECT(I7840) LENGTH(2)
1157	T12C	ADDRESS. HEX LOCATION(00002F00) IN CSECT(I7840) LENGTH(2)
1159	T12D	ADDRESS. HEX LOCATION(00002F04) IN CSECT(I7840) LENGTH(2)
1152	T12E	ADDRESS. HEX LOCATION(00002EF8) IN CSECT(I7840) LENGTH(4)
1161	T12F	ADDRESS. HEX LOCATION(00002F08) IN CSECT(I7840) LENGTH(2)

DECLARED	NAME	ATTRIBUTES AND REFERENCES
1210	T20TC	1148 ADDRESS. HEX LOCATION(00002F34) IN CSECT(I7840) LENGTH(6)
1212	T20T1	1207 ADDRESS. HEX LOCATION(00002F3C) IN CSECT(I7840) LENGTH(4)
1211	T20T2	1208 1210 ADDRESS. HEX LOCATION(00002F3A) IN CSECT(I7840) LENGTH(2)
1343	T23A	1209 ADDRESS. HEX LOCATION(00003032) IN CSECT(I7840) LENGTH(2)
1348	T23AA	1347 ADDRESS. HEX LOCATION(00003042) IN CSECT(I7840) LENGTH(2)
1334	T23SS	1359 1361 ADDRESS. HEX LOCATION(00003020) IN CSECT(I7840) LENGTH(2)
1313	T23T	1332 ADDRESS. HEX LOCATION(00002FDA) IN CSECT(I7840) LENGTH(6)
1337	T23TT	1310 ADDRESS. HEX LOCATION(00003026) IN CSECT(I7840) LENGTH(2)
1317	T23T1	1335 ADDRESS. HEX LOCATION(00002FEC) IN CSECT(I7840) LENGTH(4)
1314	T23T2	1311 1313 ADDRESS. HEX LOCATION(00002FE0) IN CSECT(I7840) LENGTH(6)
1368	T23U	1312 ADDRESS. HEX LOCATION(0000307E) IN CSECT(I7840) LENGTH(4)
1340	T23UU	1347 1351 1365 ADDRESS. HEX LOCATION(0000302C) IN CSECT(I7840) LENGTH(2)
1352	T23YY	1338 ADDRESS. HEX LOCATION(0000304E) IN CSECT(I7840) LENGTH(4)
929	T3C02	1324 ADDRESS. HEX LOCATION(00002E5E) IN CSECT(I7840) LENGTH(6)
1626	T50A	530 ADDRESS. HEX LOCATION(00003326) IN CSECT(I7840) LENGTH(6)
1632	T50AA	1496 ADDRESS. HEX LOCATION(00003342) IN CSECT(I7840) LENGTH(2)
1509	T50B	1480 ADDRESS. HEX LOCATION(000031A0) IN CSECT(I7840) LENGTH(6)
1636	T50BB	1503 1507 1629 1631 ADDRESS. HEX LOCATION(0000334E) IN CSECT(I7840) LENGTH(2)
1508	T50C	1487 1521 1537 ADDRESS. HEX LOCATION(0000319A) IN CSECT(I7840) LENGTH(6)
1633	T50CC	1505 ADDRESS. HEX LOCATION(00003344) IN CSECT(I7840) LENGTH(2)
1513	T50D	1637 ADDRESS. HEX LOCATION(000031B2) IN CSECT(I7840) LENGTH(6)
1490	T50E	1510 ADDRESS. HEX LOCATION(00003150) IN CSECT(I7840) LENGTH(4)
1524	T50F	1512 ADDRESS. HEX LOCATION(000031E0) IN CSECT(I7840) LENGTH(2)
1489	T50G	1514 ADDRESS. HEX LOCATION(0000314A) IN CSECT(I7840) LENGTH(6)
1540	T50H	1523 1539 ADDRESS. HEX LOCATION(00003214) IN CSECT(I7840) LENGTH(6)
1580	T50I	1525 ADDRESS. HEX LOCATION(000032A6) IN CSECT(I7840) LENGTH(6)
1504	T50J	1541 ADDRESS. HEX LOCATION(0000318A) IN CSECT(I7840) LENGTH(6)
1548	T50L	1496 1498 1500 1502 ADDRESS. HEX LOCATION(00003230) IN CSECT(I7840) LENGTH(6)
1554	T50M	1543 1546 ADDRESS. HEX LOCATION(00003244) IN CSECT(I7840) LENGTH(6)
1562	T50N	1549 1552 ADDRESS. HEX LOCATION(00003264) IN CSECT(I7840) LENGTH(6)
1568	T50R	1557 1560 ADDRESS. HEX LOCATION(00003278) IN CSECT(I7840) LENGTH(6)
1576	T50S	1563 1566 ADDRESS. HEX LOCATION(0000329C) IN CSECT(I7840) LENGTH(6)
1639	T50T	1571 1573 ADDRESS. HEX LOCATION(00003352) IN CSECT(I7840) LENGTH(4)
1454	T50TC	1575 1589 1625 1635 ADDRESS. HEX LOCATION(000030AC) IN CSECT(I7840) LENGTH(6)
1474	T50T1	1450 ADDRESS. HEX LOCATION(00003112) IN CSECT(I7840) LENGTH(4)
1456	T50T2	1451 1454 ADDRESS. HEX LOCATION(000030B8) IN CSECT(I7840) LENGTH(6)
1528	T50T3	1453 ADDRESS. HEX LOCATION(000031EA) IN CSECT(I7840) LENGTH(4)
1466	T50U	1452 1455 ADDRESS. HEX LOCATION(000030E8) IN CSECT(I7840) LENGTH(6)
1583	T50W	1577 ADDRESS. HEX LOCATION(000032B0) IN CSECT(I7840) LENGTH(6)
1586	T50X	1581 ADDRESS. HEX LOCATION(000032BA) IN CSECT(I7840) LENGTH(6)
1589	T50Y	1584 ADDRESS. HEX LOCATION(000032C4) IN CSECT(I7840) LENGTH(4)
1621	T500	1587 ADDRESS. HEX LOCATION(0000331C) IN CSECT(I7840) LENGTH(4)
1620	T501	1591 1595 1617 1619 ADDRESS. HEX LOCATION(0000331A) IN CSECT(I7840) LENGTH(2)
1624	T502	1601 ADDRESS. HEX LOCATION(00003320) IN CSECT(I7840) LENGTH(2)
1613	T503	1603 ADDRESS. HEX LOCATION(00003300) IN CSECT(I7840) LENGTH(2)
1611	T504	1605 1607 ADDRESS. HEX LOCATION(000032FC) IN CSECT(I7840) LENGTH(2)
1614	T505	1609 ADDRESS. HEX LOCATION(00003302) IN CSECT(I7840) LENGTH(6)
1618	T506	1612 ADDRESS. HEX LOCATION(00003312) IN CSECT(I7840) LENGTH(6)
1630	T507	1615 ADDRESS. HEX LOCATION(00003338) IN CSECT(I7840) LENGTH(6)
1836	T51A	1627 ADDRESS. HEX LOCATION(00003506) IN CSECT(I7840) LENGTH(6)
1838	T51AA	1762 ADDRESS. HEX LOCATION(00003510) IN CSECT(I7840) LENGTH(2)
1769	T51B	1748 ADDRESS. HEX LOCATION(0000343A) IN CSECT(I7840) LENGTH(6)
1842	T51BB	1767 1837 ADDRESS. HEX LOCATION(0000351C) IN CSECT(I7840) LENGTH(2)
1839	T51CC	1755 ADDRESS. HEX LOCATION(00003512) IN CSECT(I7840) LENGTH(2)
1758	T51E	1843 ADDRESS. HEX LOCATION(0000340A) IN CSECT(I7840) LENGTH(4)
		1772

DECLARED	NAME	ATTRIBUTES AND REFERENCES
1773	T51H	ADDRESS. HEX LOCATION(0000344A) IN CSECT(I7840) LENGTH(6)
1797	T51I	1770 ADDRESS. HEX LOCATION(000034A0) IN CSECT(I7840) LENGTH(6)
1768	T51J	1774 ADDRESS. HEX LOCATION(00003434) IN CSECT(I7840) LENGTH(6)
1781	T51L	1764 1766 ADDRESS. HEX LOCATION(00003466) IN CSECT(I7840) LENGTH(6)
1787	T51M	1776 1779 ADDRESS. HEX LOCATION(0000347A) IN CSECT(I7840) LENGTH(6)
1793	T51S	1782 1785 ADDRESS. HEX LOCATION(00003496) IN CSECT(I7840) LENGTH(6)
1845	T51T	1790 ADDRESS. HEX LOCATION(00003520) IN CSECT(I7840) LENGTH(4)
1724	T51TC	1733 1792 1803 1835 1841 ADDRESS. HEX LOCATION(0000337A) IN CSECT(I7840) LENGTH(6)
1742	T51T1	1721 ADDRESS. HEX LOCATION(000033CC) IN CSECT(I7840) LENGTH(4)
1725	T51T2	1722 1724 ADDRESS. HEX LOCATION(00003380) IN CSECT(I7840) LENGTH(4)
1737	T51U	1723 ADDRESS. HEX LOCATION(000033B4) IN CSECT(I7840) LENGTH(6)
1800	T51W	1794 ADDRESS. HEX LOCATION(000034AA) IN CSECT(I7840) LENGTH(6)
1803	T51Y	1798 ADDRESS. HEX LOCATION(000034B4) IN CSECT(I7840) LENGTH(4)
1734	T51YY	1801 ADDRESS. HEX LOCATION(000033A2) IN CSECT(I7840) LENGTH(6)
1831	T510	1732 ADDRESS. HEX LOCATION(000034FC) IN CSECT(I7840) LENGTH(4)
1830	T511	1805 1809 1829 ADDRESS. HEX LOCATION(000034FA) IN CSECT(I7840) LENGTH(2)
1834	T512	1815 ADDRESS. HEX LOCATION(00003500) IN CSECT(I7840) LENGTH(2)
1827	T513	1817 ADDRESS. HEX LOCATION(000034F0) IN CSECT(I7840) LENGTH(2)
1825	T514	1819 1821 ADDRESS. HEX LOCATION(000034EC) IN CSECT(I7840) LENGTH(2)
1828	T516	1823 ADDRESS. HEX LOCATION(000034F2) IN CSECT(I7840) LENGTH(6)
1362	T710	1826 ADDRESS. HEX LOCATION(0000306E) IN CSECT(I7840) LENGTH(4)
1860	T72A	1326 ADDRESS. HEX LOCATION(00003536) IN CSECT(I7840) LENGTH(4)
1861	T72B	561 587 610 ADDRESS. HEX LOCATION(0000353A) IN CSECT(I7840) LENGTH(4)
1318	T723	1859 ADDRESS. HEX LOCATION(00002FF0) IN CSECT(I7840) LENGTH(2)
1475	T750	1319 ADDRESS. HEX LOCATION(00003116) IN CSECT(I7840) LENGTH(2)
1743	T751	1476 ADDRESS. HEX LOCATION(000033D0) IN CSECT(I7840) LENGTH(2)
1127	T7812	1744 ADDRESS. HEX LOCATION(00002EA2) IN CSECT(I7840) LENGTH(4)
1066	T7838	434 446 ADDRESS. HEX LOCATION(00002E66) IN CSECT(I7840) LENGTH(4)
1442	T7850	458 467 488 497 626 ADDRESS. HEX LOCATION(00003082) IN CSECT(I7840) LENGTH(4)
1855	T7872	518 597 ADDRESS. HEX LOCATION(00003524) IN CSECT(I7840) LENGTH(4)
1958	VPDCB	560 586 609 ADDRESS. HEX LOCATION(000035BE) IN CSECT(I7840) LENGTH(2)
1980	WKDCB	2347 ADDRESS. HEX LOCATION(000035DE) IN CSECT(I7840) LENGTH(2)
1947	WRDCB	2361 2362 2377 2378 ADDRESS. HEX LOCATION(000035AE) IN CSECT(I7840) LENGTH(2)
2019	WPSID	2350 ADDRESS. HEX LOCATION(00003624) IN CSECT(I7840) LENGTH(2)
1891	WSDCB	1898 1987 2195 2276 2378 2382 ADDRESS. HEX LOCATION(0000355E) IN CSECT(I7840) LENGTH(2)
2023	WSIDT	2381 2382 2384 2385 ADDRESS. HEX LOCATION(0000362C) IN CSECT(I7840) LENGTH(2)
872	XE	2191 2362 2385 ABSOLUTE. HEX VALUE(00000024)
870	XI	2562 2624 ABSOLUTE. HEX VALUE(00000022)
2443	XIO	2468 2609 ADDRESS. HEX LOCATION(0000385A) IN CSECT(I7840) LENGTH(4)
2624	XIOCK	2327 2330 2338 2345 2348 2351 2359 2363 2367 ADDRESS. HEX LOCATION(00003922) IN CSECT(I7840) LENGTH(2)
2631	XIOCO	2375 2379 2383 2386 2389 ADDRESS. HEX LOCATION(00003934) IN CSECT(I7840) LENGTH(2)
2448	XIOCS	2629 ADDRESS. HEX LOCATION(00003864) IN CSECT(I7840) LENGTH(6)
2633	XIOCV	1354 2640 ADDRESS. HEX LOCATION(00003938) IN CSECT(I7840) LENGTH(2)
2642	XIOCX	2627 ADDRESS. HEX LOCATION(00003952) IN CSECT(I7840) LENGTH(4)
2517	XIOER	2634 ADDRESS. HEX LOCATION(000038C0) IN CSECT(I7840) LENGTH(2)
2452	XIO1	2648 ADDRESS. HEX LOCATION(00003874) IN CSECT(I7840) LENGTH(4)
2465	XIO2	2444 ADDRESS. HEX LOCATION(0000389A) IN CSECT(I7840) LENGTH(2)
2477	XIO8	2451 ADDRESS. HEX LOCATION(000038AE) IN CSECT(I7840) LENGTH(2)
65	XTRNL	2482 ABSOLUTE. HEX VALUE(00000001)
2001	ZERO0	556 573 582 ADDRESS. HEX LOCATION(000035FE) IN CSECT(I7840) LENGTH(2)
		1234 1495 1504 1513 1574 1761 1791 2238