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LOCTR OBJECT TEXT          STMT SOURCE STATEMENT          COPYRIGHT IBM CORP 1976
3      COPY LOG7A20          ** MAP EC HISTORY **
4      *****
5      *
6      *          ***          PPEREQUISITES          ***
7      *
8      *          NONE
9      *
10     *****
11     *
12     *          ***          MODIFICATIONS          ***
13     *
14     *          CHANGES MADE TO CORRECT ERRORS FOUND WHILE IN TEST
15     *
16     *****
17     *
18     *          ***          REA'S INCORPORATED          ***
19     *
20     *          NONE
21     *
22     *****
23     *
24     *          ***          SPECIAL INSTRUCTIONS          ***
25     *
26     *          NONE
27     *
28     *****
29     *
30     *          ***          E. C. HISTORY          ***
31     *
32     *          DATE 17AUG78 DATE 02OCT78 DATE 10JAN79 DATE
33     *          E.C. 755391 E.C. 375102 E.C. 375222 E.C.
34     *
35     *****
002500 I7A20 START X'2500'          START ADDRESS OF ALL 'I' TYPE PROG
000100 @QUES EQU X'0100'          EQUATED VALUE FOR MDI STATEMENT
000101 @FIXT EQU X'0101'          EQUATED VALUE FOR MDI STATEMENT
000102 @STOP EQU X'0102'          EQUATED VALUE FOR MDI STATEMENT
000200 @GOTO EQU X'0200'          EQUATED VALUE FOR MDI STATEMENT
000201 @CALL EQU X'0201'          EQUATED VALUE FOR MDI STATEMENT
000300 @INPT EQU X'0300'          EQUATED VALUE FOR MDI STATEMENT
000400 @QUXX EQU X'0400'          EQUATED VALUE FOR MDI STATEMENT
000500 @QUXX EQU X'0500'          EQUATED VALUE FOR MDI STATEMENT
000600 @NVLD EQU X'0600'          EQUATED VALUE FOR MDI STATEMENT
000000 @O EQU X'0000'          EQUATE FOR EQUAL
000004 @NE EQU X'0004'          EQUATE FOR NOT EQUAL
000008 @HI EQU X'0008'          EQUATE FOR HIGH
00000C @NH EQU X'000C'          EQUATE FOR NOT HIGH
000010 @LO EQU X'0010'          EQUATE FOR LOW
000014 @NL EQU X'0014'          EQUATE FOR NOT LOW
000018 @LT EQU X'0018'          EQUATE FOR LESS THAN
00000C @LE EQU X'000C'          EQUATE FOR LESS THAN OR EQUAL TO
000008 @GT EQU X'0008'          EQUATE FOR GREATER THAN
000014 @GE EQU X'0014'          EQUATE FOR GREATER THAN OR EQUAL TO
000200 @ON EQU X'0200'          EQUATE FOR ON
000202 @OF EQU X'0202'          EQUATE FOR OFF
000204 @MX EQU X'0204'          EQUATE FOR MIXED
000000 @EBC EQU X'0000'          EQUATE FOR EBCDIC DATA TRANSFER
000001 @HEX EQU X'0001'          EQUATE FOR HEX DATA TRANSFER
000001 @XTRNL EQU X'0001'          EQUATE FOR EXTERNAL REFERENCE
000000 @INTRNL EQU X'0000'          EQUATE FOR INTERNAL REFERENCE
000000 @PARM EQU X'0000'          EQUATE INDICATING PARAMETER
000001 @DA EQU X'0001'          EQUATE FOR DEVICE ADDRESS
000002 @UA EQU X'0002'          EQUATE FOR UNIT ADDRESS
000000 @DUMMY EQU X'0000'          DUMMY EQUATE
001800 @FD EQU *-X'0D00'          ADDRESS OF MDI HEADER
000232 @FTYPE EQU *-X'20CE'          ADDRESS OF PROCESSOR TYPE FIELD
00180C @STEPNUM EQU PID+X'000C'          ADDRESS OF DECIMAL STEP NUMBER
00180E @OPWD1 EQU PID+X'000E'          ADDRESS OF OPTION WORD ONE
001810 @OPWD2 EQU PID+X'0010'          ADDRESS OF OPTION WORD TWO
001818 @TUSTATUS EQU PID+X'0018'          ADDRESS OF TU STATUS WORD
00181A @TUWORK EQU PID+X'001A'          ADDRESS OF TU WORK AREA
00189A @TUPARN1 EQU PID+X'009A'          ADDRESS OF PARM 1 POINTER
00189C @TUPARN2 EQU PID+X'009C'          ADDRESS OF PARM 2 POINTER
00189E @TUPARN3 EQU PID+X'009E'          ADDRESS OF PARM 3 POINTER
0018A0 @TUPARN4 EQU PID+X'00A0'          ADDRESS OF PARM 4 POINTER
0018A2 @TUPARN5 EQU PID+X'00A2'          ADDRESS OF PARM 5 POINTER
0018A4 @TUPARN6 EQU PID+X'00A4'          ADDRESS OF PARM 6 POINTER
0018A6 @TUPARN7 EQU PID+X'00A6'          ADDRESS OF PARM 7 POINTER
0018A8 @TUPARN8 EQU PID+X'00A8'          ADDRESS OF PARM 8 POINTER
0018AA @TUPARN9 EQU PID+X'00AA'          ADDRESS OF PARM 9 POINTER
0018AC @TUPARN10 EQU PID+X'00AC'          ADDRESS OF PARM 10 POINTER
0018AE @TUPARN11 EQU PID+X'00AE'          ADDRESS OF PARM 11 POINTER
0018B0 @TUPARN12 EQU PID+X'00B0'          ADDRESS OF PARM 12 POINTER
0018B2 @TUPARN13 EQU PID+X'00B2'          ADDRESS OF PARM 13 POINTER
0018B4 @TUPARN14 EQU PID+X'00B4'          ADDRESS OF PARM 14 POINTER
0018B6 @TUPARN15 EQU PID+X'00B6'          ADDRESS OF PARM 15 POINTER
0018B8 @TUPARN16 EQU PID+X'00B8'          ADDRESS OF PARM 16 POINTER
0018BA @TUMSGWTR EQU PID+X'00BA'          ADDRESS OF -> TO COMMON MSG WRITER
0018BE @TUA EQU PID+X'00BE'          ADDRESS OF UNIT ADDRESS IN EBC
0018C0 @TUDA EQU PID+X'00C0'          ADDRESS OF DEVICE ADDRESS IN EBC
0018C2 @TUBUFF EQU PID+X'00C2'          ADDRESS OF LAST USED WORD IN MAP
0018C4 @TULAST EQU PID+X'00C4'          ADDRESS OF LAST ADDRESSABLE WORD
0018C6 @TURESULN EQU PID+X'00C6'          ADDRESS OF LENGTH OF TU RESULTS
0018C8 @TURESUL EQU PID+X'00C8'          ADDRESS OF TU RESULTS FIELD
0018FC @MAPNAME EQU PID+X'00FC'          ADDRESS OF MAP NAME FIELD IN HEX
001948 @TUINPT EQU PID+X'0148'          ADDRESS OF SINPT DATA
00196E @PARMARA EQU PID+X'016E'          ADDRESS OF SINPT INPUT AREA
001988 @DCADD1 EQU PID+X'0188'          MDI POINTER
00198A @DCADD2 EQU PID+X'018A'          MDI POINTER
00198C @DCADD3 EQU PID+X'018C'          ADDRESS OF MDI STATUS
00198E @SUPSTAT EQU PID+X'018E'          ADDRESS OF DEVICE ADDRESS TABLE 0
001990 @DEVADD EQU PID+X'0190'          ADDRESS OF DEVICE ADDRESS TABLE 1
001994 @DEVADD1 EQU PID+X'0194'          ADDRESS OF DEVICE ADDRESS TABLE 2
001998 @DEVADD2 EQU PID+X'0198'          ADDRESS OF DEVICE ADDRESS TABLE 3
0019A2 @DEVADD3 EQU PID+X'019A'          ADDRESS OF DEVICE ADDRESS TABLE 4
0019A6 @DEVADD4 EQU PID+X'019E'          ADDRESS OF DEVICE ADDRESS TABLE 5
0019B0 @DEVADD5 EQU PID+X'01A2'          ADDRESS OF DEVICE ADDRESS TABLE 6
0019B4 @DEVADD6 EQU PID+X'01A6'          ADDRESS OF DEVICE ADDRESS TABLE 7
0019B8 @DEVADD7 EQU PID+X'01AA'          ADDRESS OF DEVICE ADDRESS TABLE 7
001A0C @PRINT OFF

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LOCTR OBJECT TEXT          STMT SOURCE STATEMENT          COPYRIGHT IBM CORP 1976
002500 2EA4          198      DC A(ENTPT)          POINT TO MAP ENTRY POINT TABLE
199     *****
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LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
308	*****			
309	*****			
310	**			
311	**		STEP AND RULE ADDRESS TABLE	**
312	**		*****	**
313	*****		*****	*****
002502	2748	15	DC AL2(N00001)	
002504	0001	16	DC XL2'0001'	
000001		17	EQN00001 EQU 0001	
002506	275A	18	DC AL2(N00002)	
002508	0002	19	DC XL2'0002'	
000002		20	EQN00002 EQU 0002	
00250A	275E	21	DC AL2(N00003)	
00250C	0003	22	DC XL2'0003'	
000003		23	EQN00003 EQU 0003	
00250E	2774	24	DC AL2(N00004)	
002510	0004	25	DC XL2'0004'	
000004		26	EQN00004 EQU 0004	
002512	2776	27	DC AL2(N00005)	
002514	0005	28	DC XL2'0005'	
000005		29	EQN00005 EQU 0005	
002516	278C	30	DC AL2(N00006)	
002518	0006	31	DC XL2'0006'	
000006		32	EQN00006 EQU 0006	
00251A	278E	33	DC AL2(N00007)	
00251C	0007	34	DC XL2'0007'	
000007		35	EQN00007 EQU 0007	
00251E	27A2	36	DC AL2(N00008)	
002520	0008	37	DC XL2'0008'	
000008		38	EQN00008 EQU 0008	
002522	27A4	39	DC AL2(N00009)	
002524	0009	40	DC XL2'0009'	
000009		41	EQN00009 EQU 0009	
002526	27BE	42	DC AL2(N00010)	
002528	0010	43	DC XL2'0010'	
00000A		44	EQN00010 EQU 0010	
00252A	27D0	45	DC AL2(N00011)	
00252C	0011	46	DC XL2'0011'	
00000B		47	EQN00011 EQU 0011	
00252E	27D2	48	DC AL2(N00012)	
002530	0012	49	DC XL2'0012'	
00000C		50	EQN00012 EQU 0012	
002532	27DE	51	DC AL2(N00013)	
002534	0013	52	DC XL2'0013'	
00000D		53	EQN00013 EQU 0013	
002536	27F4	54	DC AL2(N00014)	
002538	0014	55	DC XL2'0014'	
00000E		56	EQN00014 EQU 0014	
00253A	2806	57	DC AL2(N00015)	
00253C	0015	58	DC XL2'0015'	
00000F		59	EQN00015 EQU 0015	
00253E	2808	60	DC AL2(N00016)	
002540	0016	61	DC XL2'0016'	
000010		62	EQN00016 EQU 0016	
002542	2814	63	DC AL2(N00017)	
002544	0017	64	DC XL2'0017'	
000011		65	EQN00017 EQU 0017	
002546	282E	66	DC AL2(N00018)	
002548	0018	67	DC XL2'0018'	
000012		68	EQN00018 EQU 0018	
00254A	2840	69	DC AL2(N00019)	
00254C	0019	70	DC XL2'0019'	
000013		71	EQN00019 EQU 0019	
00254E	2842	72	DC AL2(N00020)	
002550	0020	73	DC XL2'0020'	
000014		74	EQN00020 EQU 0020	
002552	284E	75	DC AL2(N00021)	
002554	0021	76	DC XL2'0021'	
000015		77	EQN00021 EQU 0021	
002556	2860	78	DC AL2(N00022)	
002558	0022	79	DC XL2'0022'	
000016		80	EQN00022 EQU 0022	
00255A	2872	81	DC AL2(N00023)	
00255C	0023	82	DC XL2'0023'	
000017		83	EQN00023 EQU 0023	
00255E	2874	84	DC AL2(N00024)	
002560	0024	85	DC XL2'0024'	
000018		86	EQN00024 EQU 0024	
002562	2880	87	DC AL2(N00025)	
002564	0025	88	DC XL2'0025'	
000019		89	EQN00025 EQU 0025	
002566	2892	90	DC AL2(N00026)	
002568	0026	91	DC XL2'0026'	
00001A		92	EQN00026 EQU 0026	
00256A	2896	93	DC AL2(N00027)	
00256C	0027	94	DC XL2'0027'	
00001B		95	EQN00027 EQU 0027	
00256E	28A8	96	DC AL2(N00028)	
002570	0028	97	DC XL2'0028'	
00001C		98	EQN00028 EQU 0028	
002572	28BC	99	DC AL2(N00029)	
002574	0029	400	DC XL2'0029'	
00001D		401	EQN00029 EQU 0029	
002576	28CE	402	DC AL2(N00030)	
002578	0030	403	DC XL2'0030'	
00001E		404	EQN00030 EQU 0030	
00257A	28D0	405	DC AL2(N00031)	
00257C	0031	406	DC XL2'0031'	
00001F		407	EQN00031 EQU 0031	
00257E	28DC	408	DC AL2(N00032)	
002580	0032	409	DC XL2'0032'	
000020		410	EQN00032 EQU 0032	
002582	28E0	411	DC AL2(N00033)	
002584	0033	412	DC XL2'0033'	
000021		413	EQN00033 EQU 0033	
002586	28F4	414	DC AL2(N00034)	
002588	0034	415	DC XL2'0034'	
000022		416	EQN00034 EQU 0034	
00258A	2906	417	DC AL2(N00035)	
00258C	0035	418	DC XL2'0035'	
000023		419	EQN00035 EQU 0035	
00258E	2908	420	DC AL2(N00036)	
002590	0036	421	DC XL2'0036'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
000024		422	EQN00036 EQU 0036	
002592	2914	423	DC AL2(N00037)	
002594	0037	424	DC XL2'0037'	
000025		425	EQN00037 EQU 0037	
002596	292F	426	DC AL2(N00038)	
002598	0038	427	DC XL2'0038'	
000026		428	EQN00038 EQU 0038	
00259A	2944	429	DC AL2(N00039)	
00259C	0039	430	DC XL2'0039'	
000027		431	EQN00039 EQU 0039	
00259E	2956	432	DC AL2(N00040)	
0025A0	0040	433	DC XL2'0040'	
000028		434	EQN00040 EQU 0040	
0025A2	2958	435	DC AL2(N00041)	
0025A4	0041	436	DC XL2'0041'	
000029		437	EQN00041 EQU 0041	
0025A6	2964	438	DC AL2(N00042)	
0025A8	0042	439	DC XL2'0042'	
00002A		440	EQN00042 EQU 0042	
0025AA	2968	441	DC AL2(N00043)	
0025AC	0043	442	DC XL2'0043'	
00002B		443	EQN00043 EQU 0043	
0025AE	297C	444	DC AL2(N00044)	
0025B0	0044	445	DC XL2'0044'	
00002C		446	EQN00044 EQU 0044	
0025B2	298E	447	DC AL2(N00045)	
0025B4	0045	448	DC XL2'0045'	
00002D		449	EQN00045 EQU 0045	
0025B6	2990	450	DC AL2(N00046)	
0025B8	0046	451	DC XL2'0046'	
00002E		452	EQN00046 EQU 0046	
0025BA	299C	453	DC AL2(N00047)	
0025BC	0047	454	DC XL2'0047'	
00002F		455	EQN00047 EQU 0047	
0025BE	29B6	456	DC AL2(N00048)	
0025C0	0048	457	DC XL2'0048'	
000030		458	EQN00048 EQU 0048	
0025C2	29BA	459	DC AL2(N00049)	
0025C4	0049	460	DC XL2'0049'	
000031		461	EQN00049 EQU 0049	
0025C6	29CC	462	DC AL2(N00050)	
0025C8	0050	463	DC XL2'0050'	
000032		464	EQN00050 EQU 0050	
0025CA	29E2	465	DC AL2(N00051)	
0025CC	0051	466	DC XL2'0051'	
000033		467	EQN00051 EQU 0051	
0025CE	29F4	468	DC AL2(N00052)	
0025D0	0052	469	DC XL2'0052'	
000034		470	EQN00052 EQU 0052	
0025D2	29F6	471	DC AL2(N00053)	
0025D4	0053	472	DC XL2'0053'	
000035		473	EQN00053 EQU 0053	
0025D6	2A02	474	DC AL2(N00054)	
0025D8	0054	475	DC XL2'0054'	
000036		476	EQN00054 EQU 0054	
0025DA	2A06	477	DC AL2(N00055)	
0025DC	0055	478	DC XL2'0055'	
000037		479	EQN00055 EQU 0055	
0025DE	2A1A	480	DC AL2(N00056)	
0025E0	0056	481	DC XL2'0056'	
000038		482	EQN00056 EQU 0056	
0025E2	2A2C	483	DC AL2(N00057)	
0025E4	0057	484	DC XL2'0057'	
000039		485	EQN00057 EQU 0057	
0025E6	2A2E	486	DC AL2(N00058)	
0025E8	0058	487	DC XL2'0058'	
00003A		488	EQN00058 EQU 0058	
0025EA	2A3A	489	DC AL2(N00059)	
0025EC	0059	490	DC XL2'0059'	
00003B		491	EQN00059 EQU 0059	
0025EE	2A4E	492	DC AL2(N00060)	
0025F0	0060	493	DC XL2'0060'	
00003C		494	EQN00060 EQU 0060	
0025F2	2A64	495	DC AL2(N00061)	
0025F4	0061	496	DC XL2'0061'	
00003D		497	EQN00061 EQU 0061	
0025F6	2A68	498	DC AL2(N00062)	
0025F8	0062	499	DC XL2'0062'	
00003E		500	EQN00062 EQU 0062	
0025FA	2A7A	501	DC AL2(N00063)	
0025FC	0063	502	DC XL2'0063'	
00003F		503	EQN00063 EQU 0063	
0025FE	2A7C	504	DC AL2(N00064)	
002600	0064	505	DC XL2'0064'	
000040		506	EQN00064 EQU 0064	
002602	2A88	507	DC AL2(N00065)	
002604	0065	508	DC XL2'0065'	
000041		509	EQN00065 EQU 0065	
002606	2AA2	510	DC AL2(N00066)	
002608	0066	511	DC XL2'0066'	
000042		512	EQN00066 EQU 0066	
00260A	2AB8	513	DC AL2(N00067)	
00260C	0067	514	DC XL2'0067'	
000043		515	EQN00067 EQU 0067	
00260E	2ABC	516	DC AL2(N00068)	
002610	0068	517	DC XL2'0068'	
000044		518	EQN00068 EQU 0068	
002612	2ACE	519	DC AL2(N00069)	
002614	0069	520	DC XL2'0069'	
000045		521	EQN00069 EQU 0069	
002616	2AD0	522	DC AL2(N00070)	
002618	0070	523	DC XL2'0070'	
000046		524	EQN00070 EQU 0070	
00261A	2ADC	525	DC AL2(N00071)	
00261C	0071	526	DC XL2'0071'	
000047		527	EQN00071 EQU 0071	
00261E	2AF0	528	DC AL2(N00072)	
002620	0072	529	DC XL2'0072'	
000048		530	EQN00072 EQU 0072	
002622	2B06	531	DC AL2(N00073)	
002624	0073	532	DC XL2'0073'	
000049		533	EQN00073 EQU 0073	
002626	2B0A	534	DC AL2(N00074)	
002628	0074	535	DC XL2'0074'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
00004A		536	EQN00074 EQU 0074	
00262A	2B1C	537	DC AL2(N00075)	
00262C	0075	538	DC XL2'0075'	
00004B		539	EQN00075 EQU 0075	
00262E	2B1E	540	DC AL2(N00076)	
002630	0076	541	DC XL2'0076'	
00004C		542	EQN00076 EQU 0076	
002632	2B2A	543	DC AL2(N00077)	
002634	0077	544	DC XL2'0077'	
00004D		545	EQN00077 EQU 0077	
002636	2B3C	546	DC AL2(N00078)	
002638	0078	547	DC XL2'0078'	
00004E		548	EQN00078 EQU 0078	
00263A	2B4E	549	DC AL2(N00079)	
00263C	0079	550	DC XL2'0079'	
00004F		551	EQN00079 EQU 0079	
00263E	2B50	552	DC AL2(N00080)	
002640	0080	553	DC XL2'0080'	
000050		554	EQN00080 EQU 0080	
002642	2B5C	555	DC AL2(N00081)	
002644	0081	556	DC XL2'0081'	
000051		557	EQN00081 EQU 0081	
002646	2B76	558	DC AL2(N00082)	
002648	0082	559	DC XL2'0082'	
000052		560	EQN00082 EQU 0082	
00264A	2B7A	561	DC AL2(N00083)	
00264C	0083	562	DC XL2'0083'	
000053		563	EQN00083 EQU 0083	
00264E	2B8C	564	DC AL2(N00084)	
002650	0084	565	DC XL2'0084'	
000054		566	EQN00084 EQU 0084	
002652	2BA2	567	DC AL2(N00085)	
002654	0085	568	DC XL2'0085'	
000055		569	EQN00085 EQU 0085	
002656	2BB4	570	DC AL2(N00086)	
002658	0086	571	DC XL2'0086'	
000056		572	EQN00086 EQU 0086	
00265A	2BB6	573	DC AL2(N00087)	
00265C	0087	574	DC XL2'0087'	
000057		575	EQN00087 EQU 0087	
00265E	2BC2	576	DC AL2(N00088)	
002660	0088	577	DC XL2'0088'	
000058		578	EQN00088 EQU 0088	
002662	2BC6	579	DC AL2(N00089)	
002664	0089	580	DC XL2'0089'	
000059		581	EQN00089 EQU 0089	
002666	2BDA	582	DC AL2(N00090)	
002668	0090	583	DC XL2'0090'	
00005A		584	EQN00090 EQU 0090	
00266A	2BEC	585	DC AL2(N00091)	
00266C	0091	586	DC XL2'0091'	
00005B		587	EQN00091 EQU 0091	
00266E	2BEE	588	DC AL2(N00092)	
002670	0092	589	DC XL2'0092'	
00005C		590	EQN00092 EQU 0092	
002672	2BFA	591	DC AL2(N00093)	
002674	0093	592	DC XL2'0093'	
00005D		593	EQN00093 EQU 0093	
002676	2C14	594	DC AL2(N00094)	
002678	0094	595	DC XL2'0094'	
00005E		596	EQN00094 EQU 0094	
00267A	2C18	597	DC AL2(N00095)	
00267C	0095	598	DC XL2'0095'	
00005F		599	EQN00095 EQU 0095	
00267E	2C2A	600	DC AL2(N00096)	
002680	0096	601	DC XL2'0096'	
000060		602	EQN00096 EQU 0096	
002682	2C40	603	DC AL2(N00097)	
002684	0097	604	DC XL2'0097'	
000061		605	EQN00097 EQU 0097	
002686	2C52	606	DC AL2(N00098)	
002688	0098	607	DC XL2'0098'	
000062		608	EQN00098 EQU 0098	
00268A	2C54	609	DC AL2(N00099)	
00268C	0099	610	DC XL2'0099'	
000063		611	EQN00099 EQU 0099	
00268E	2C60	612	DC AL2(N00100)	
002690	0100	613	DC XL2'0100'	
000064		614	EQN00100 EQU 0100	
002692	2C64	615	DC AL2(N00101)	
002694	0101	616	DC XL2'0101'	
000065		617	EQN00101 EQU 0101	
002696	2C78	618	DC AL2(N00102)	
002698	0102	619	DC XL2'0102'	
000066		620	EQN00102 EQU 0102	
00269A	2C8A	621	DC AL2(N00103)	
00269C	0103	622	DC XL2'0103'	
000067		623	EQN00103 EQU 0103	
00269E	2C8C	624	DC AL2(N00104)	
0026A0	0104	625	DC XL2'0104'	
000068		626	EQN00104 EQU 0104	
0026A2	2C98	627	DC AL2(N00105)	
0026A4	0105	628	DC XL2'0105'	
000069		629	EQN00105 EQU 0105	
0026A6	2CB2	630	DC AL2(N00106)	
0026A8	0106	631	DC XL2'0106'	
00006A		632	EQN00106 EQU 0106	
0026AA	2CB6	633	DC AL2(N00107)	
0026AC	0107	634	DC XL2'0107'	
00006B		635	EQN00107 EQU 0107	
0026AE	2CC8	636	DC AL2(N00108)	
0026B0	0108	637	DC XL2'0108'	
00006C		638	EQN00108 EQU 0108	
0026B2	2CDC	639	DC AL2(N00109)	
0026B4	0109	640	DC XL2'0109'	
00006D		641	EQN00109 EQU 0109	
0026B6	2CEE	642	DC AL2(N00110)	
0026B8	0110	643	DC XL2'0110'	
00006E		644	EQN00110 EQU 0110	
0026BA	2CF0	645	DC AL2(N00111)	
0026BC	0111	646	DC XL2'0111'	
00006F		647	EQN00111 EQU 0111	
0026BE	2CFC	648	DC AL2(N00112)	
0026C0	0112	649	DC XL2'0112'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
000070		650	EQN00112 EQU 0112	
0026C2	2D00	651	DC AL2(N00113)	
0026C4	0113	652	DC XL2'0113'	
000071		653	EQN00113 EQU 0113	
0026C6	2D14	654	DC AL2(N00114)	
0026C8	0114	655	DC XL2'0114'	
000072		656	EQN00114 EQU 0114	
0026CA	2D18	657	DC AL2(N00115)	
0026CC	0115	658	DC XL2'0115'	
000073		659	EQN00115 EQU 0115	
0026CE	2D2A	660	DC AL2(N00116)	
0026D0	0116	661	DC XL2'0116'	
000074		662	EQN00116 EQU 0116	
0026D2	2D40	663	DC AL2(N00117)	
0026D4	0117	664	DC XL2'0117'	
000075		665	EQN00117 EQU 0117	
0026D6	2D52	666	DC AL2(N00118)	
0026D8	0118	667	DC XL2'0118'	
000076		668	EQN00118 EQU 0118	
0026DA	2D54	669	DC AL2(N00119)	
0026DC	0119	670	DC XL2'0119'	
000077		671	EQN00119 EQU 0119	
0026DE	2D60	672	DC AL2(N00120)	
0026E0	0120	673	DC XL2'0120'	
000078		674	EQN00120 EQU 0120	
0026E2	2D64	675	DC AL2(N00121)	
0026E4	0121	676	DC XL2'0121'	
000079		677	EQN00121 EQU 0121	
0026E6	2D78	678	DC AL2(N00122)	
0026E8	0122	679	DC XL2'0122'	
00007A		680	EQN00122 EQU 0122	
0026EA	2D8A	681	DC AL2(N00123)	
0026EC	0123	682	DC XL2'0123'	
00007B		683	EQN00123 EQU 0123	
0026EE	2D8C	684	DC AL2(N00124)	
0026F0	0124	685	DC XL2'0124'	
00007C		686	EQN00124 EQU 0124	
0026F2	2D98	687	DC AL2(N00125)	
0026F4	0125	688	DC XL2'0125'	
00007D		689	EQN00125 EQU 0125	
0026F6	2DA	690	DC AL2(N00126)	
0026F8	0126	691	DC XL2'0126'	
00007E		692	EQN00126 EQU 0126	
0026FA	2DBC	693	DC AL2(N00127)	
0026FC	0127	694	DC XL2'0127'	
00007F		695	EQN00127 EQU 0127	
0026FE	2DCE	696	DC AL2(N00128)	
002700	0128	697	DC XL2'0128'	
000080		698	EQN00128 EQU 0128	
002702	2DD0	699	DC AL2(N00129)	
002704	0129	700	DC XL2'0129'	
000081		701	EQN00129 EQU 0129	
002706	2DDC	702	DC AL2(N00130)	
002708	0130	703	DC XL2'0130'	
000082		704	EQN00130 EQU 0130	
00270A	2DF2	705	DC AL2(N00131)	
00270C	0131	706	DC XL2'0131'	
000083		707	EQN00131 EQU 0131	
00270E	2DF6	708	DC AL2(N00132)	
002710	0132	709	DC XL2'0132'	
000084		710	EQN00132 EQU 0132	
002712	2E08	711	DC AL2(N00133)	
002714	0133	712	DC XL2'0133'	
000085		713	EQN00133 EQU 0133	
002716	2E1A	714	DC AL2(N00134)	
002718	0134	715	DC XL2'0134'	
000086		716	EQN00134 EQU 0134	
00271A	2E1C	717	DC AL2(N00135)	
00271C	0135	718	DC XL2'0135'	
000087		719	EQN00135 EQU 0135	
00271E	2E28	720	DC AL2(N00136)	
002720	0136	721	DC XL2'0136'	
000088		722	EQN00136 EQU 0136	
002722	2E34	723	DC AL2(N00137)	
002724	0137	724	DC XL2'0137'	
000089		725	EQN00137 EQU 0137	
002726	2E48	726	DC AL2(N00138)	
002728	0138	727	DC XL2'0138'	
00008A		728	EQN00138 EQU 0138	
00272A	2E4C	729	DC AL2(N00139)	
00272C	0139	730	DC XL2'0139'	
00008B		731	EQN00139 EQU 0139	
00272E	2E66	732	DC AL2(N00140)	
002730	0140	733	DC XL2'0140'	
00008C		734	EQN00140 EQU 0140	
002732	2E6A	735	DC AL2(N00141)	
002734	0141	736	DC XL2'0141'	
00008D		737	EQN00141 EQU 0141	
002736	2E7E	738	DC AL2(N00142)	
002738	0142	739	DC XL2'0142'	
00008E		740	EQN00142 EQU 0142	
00273A	2E90	741	DC AL2(N00143)	
00273C	0143	742	DC XL2'0143'	
00008F		743	EQN00143 EQU 0143	
00273E	2E92	744	DC AL2(N00144)	
002740	0144	745	DC XL2'0144'	
000090		746	EQN00144 EQU 0144	
002742	2E9E	747	DC AL2(N00145)	
002744	0145	748	DC XL2'0145'	
000091		749	EQN00145 EQU 0145	
002746	0000	750	DC AL2(DUMMY)	
751			*****	
752			*****	
753			**	
754			**	
755			**	
756			*****	
757			*****	
758	N00001	STUXX	T7A50,01,80,OF,QT=(Q00044),YES=N00003	
759	N00001		A(@TUX)	
760+		DC	AL2(N00003)	
761+		DC	A(T7A50)	
762+		DC	AL2(OF)	
763+		DC	AL2(01)	
002748	0500			
00274A	275E			
00274C	34E8			
00274E	0202			
002750	0001			

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002752	80	764+	DC X'80'	
002753	00	765+	ALIGN WORD	
002754	0000	766+	DC AL2(0)	
002756	C1C1	767+	DC C'AA'	
002758	196E	768+	ALIGN WORD	
00275A	0101	769+	DC AL2(PARMARA)	
00275C	2EAA	770 N00002	SFIXT FT=(P00046)	
		771 N00002	DC A(@SIXT)	
		772+	DC A(F00046)	
		773 N00003	STUXX T7A03,02,0703,EQ,PLNG=6,PARM=4F0000,YES=N00005,	X
		774 N00003	DC A(@TUXX)	
		775+	DC AL2(N00005)	
		776+	DC A(T7A03)	
		777+	DC AL2(EQ)	
		778+	DC AL2(02)	
		779+	DC X'0703'	
		780+	ALIGN WORD	
		781+	DC AL2(6)	
		782+	DC C'4F0000'	
		783+	ALIGN WORD	
		784+	DC AL2(PARMARA)	
		785 N00004	SNVLD FT=(P00036)	
		786 N00004	DC A(@NVLD)	
		787 N00005	STUXX T7A03,02,0703,EQ,PLNG=6,PARM=4D0000,YES=N00007,	X
		788 N00005	DC A(@TUXX)	
		789+	DC AL2(N00007)	
		790+	DC A(T7A03)	
		791+	DC AL2(EQ)	
		792+	DC AL2(02)	
		793+	DC X'0703'	
		794+	ALIGN WORD	
		795+	DC AL2(6)	
		796+	DC C'4F0000'	
		797+	ALIGN WORD	
		798+	DC AL2(PARMARA)	
		799 N00006	SNVLD FT=(P00036)	
		800 N00006	DC A(@NVLD)	
		801 N00007	STUXX T7A06,01,82,EQ,PLNG=4,PARM=0001,QT=(Q00061),YES=N00009,	X
		802 N00007	DC A(@TUXX)	
		803+	DC AL2(N00009)	
		804+	DC A(T7A06)	
		805+	DC AL2(EQ)	
		806+	DC AL2(01)	
		807+	DC X'82'	
		808+	ALIGN WORD	
		809+	DC AL2(4)	
		810+	DC C'0001'	
		811+	ALIGN WORD	
		812+	DC AL2(PARMARA)	
		813 N00008	SNVLD FT=(P00036)	
		814 N00008	DC A(@NVLD)	
		815 N00009	STUXX T7A02,10,000000100000000040,OF,QT=(Q00011),YES=N00013,X	
		816 N00009	DC A(@TUXX)	
		817+	DC AL2(N00013)	
		818+	DC A(T7A02)	
		819+	DC AL2(OF)	
		820+	DC AL2(10)	
		821+	DC X'000000100000000040'	
		822+	ALIGN WORD	
		823+	DC AL2(0)	
		824+	DC C'AA'	
		825+	ALIGN WORD	
		826+	DC AL2(PARMARA)	
		827 N00010	STUXX T7A08,01,C3,EQ,PLNG=1,PARM=@C,QT=(Q00038),YES=N00012	
		828 N00010	DC A(@TUXX)	
		829+	DC AL2(N00012)	
		830+	DC A(T7A08)	
		831+	DC AL2(EQ)	
		832+	DC AL2(01)	
		833+	DC X'C3'	
		834+	ALIGN WORD	
		835+	DC AL2(1)	
		836+	DC C'@C'	
		837+	ALIGN WORD	
		838+	DC AL2(PARMARA)	
		839 N00011	SNVLD FT=(P00036)	
		840 N00011	DC A(@NVLD)	
		841 N00012	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		842 N00012	DC A(@CALL)	
		843+	DC A(F00040)	
		844+	DC CL4'7A21'	
		845+	DC CL2'A'	
		846+	DC AL2(XTRNL)	
		847 N00013	STUXX T7A02,06,00000000101,OF,QT=(Q00086),YES=N00017	
		848 N00013	DC A(@TUXX)	
		849+	DC AL2(N00017)	
		850+	DC A(T7A02)	
		851+	DC AL2(OF)	
		852+	DC AL2(06)	
		853+	DC X'000000000101'	
		854+	ALIGN WORD	
		855+	DC AL2(0)	
		856+	DC C'AA'	
		857+	ALIGN WORD	
		858+	DC AL2(PARMARA)	
		859 N00014	STUXX T7A08,01,D5,EQ,PLNG=1,PARM=@N,QT=(Q00038),YES=N00016	
		860 N00014	DC A(@TUXX)	
		861+	DC AL2(N00016)	
		862+	DC A(T7A08)	
		863+	DC AL2(EQ)	
		864+	DC AL2(01)	
		865+	DC X'D5'	
		866+	ALIGN WORD	
		867+	DC AL2(1)	
		868+	DC C'@N'	
		869+	ALIGN WORD	
		870+	DC AL2(PARMARA)	
		871 N00015	SNVLD FT=(P00036)	
		872 N00015	DC A(@NVLD)	
		873 N00016	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		874 N00016	DC A(@CALL)	
		875+	DC A(F00040)	
		876+	DC CL4'7A21'	
		877+	DC CL2'A'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002812	0001	878+	DC AL2(XTRNL)	
		879 N00017	STUXX T7A02,10,000000100000000010,OF,QT=(Q00102),YES=N00021,X	
		880 N00017	DC A(@TUXX)	
		881+	DC AL2(N00021)	
		882+	DC A(T7A02)	
		883+	DC AL2(OF)	
		884+	DC AL2(10)	
		885+	DC X'000000100000000010'	
		886+	ALIGN WORD	
		887+	DC AL2(0)	
		888+	DC C'2'	
		889+	ALIGN WORD	
		890+	DC AL2(PARMARA)	
		891 N00018	STUXX T7A08,01,D5,EQ,PLNG=1,PARM=@N,QT=(Q00038),YES=N00020	
		892 N00018	DC A(@TUXX)	
		893+	DC AL2(N00020)	
		894+	DC A(T7A08)	
		895+	DC AL2(EQ)	
		896+	DC AL2(01)	
		897+	DC X'D5'	
		898+	ALIGN WORD	
		899+	DC AL2(1)	
		900+	DC C'@N'	
		901+	ALIGN WORD	
		902+	DC AL2(PARMARA)	
		903 N00019	SNVLD FT=(P00036)	
		904 N00019	DC A(@NVLD)	
		905 N00020	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		906 N00020	DC A(@CALL)	
		907+	DC A(F00040)	
		908+	DC CL4'7A21'	
		909+	DC CL2'A'	
		910+	DC AL2(XTRNL)	
		911 N00021	STUXX T7A12,01,80,OF,QT=(Q00118),YES=N00025,CT=(C00116),	X
		912 N00021	DC A(@TUXX)	
		913+	DC AL2(N00025)	
		914+	DC A(T7A12)	
		915+	DC AL2(OF)	
		916+	DC AL2(01)	
		917+	DC X'80'	
		918+	ALIGN WORD	
		919+	DC AL2(0)	
		920+	DC C'AA'	
		921+	ALIGN WORD	
		922+	DC AL2(PARMARA)	
		923 N00022	STUXX T7A08,01,C4,EQ,PLNG=1,PARM=@D,QT=(Q00038),YES=N00024	
		924 N00022	DC A(@TUXX)	
		925+	DC AL2(N00024)	
		926+	DC A(T7A08)	
		927+	DC AL2(EQ)	
		928+	DC AL2(01)	
		929+	DC X'C4'	
		930+	ALIGN WORD	
		931+	DC AL2(1)	
		932+	DC C'@D'	
		933+	ALIGN WORD	
		934+	DC AL2(PARMARA)	
		935 N00023	SNVLD FT=(P00036)	
		936 N00023	DC A(@NVLD)	
		937 N00024	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		938 N00024	DC A(@CALL)	
		939+	DC A(F00040)	
		940+	DC CL4'7A21'	
		941+	DC CL2'A'	
		942+	DC AL2(XTRNL)	
		943 N00025	STUXX T7A19,01,00,EQ,QT=(Q00006),YES=N00027,CT=(C00137),	X
		944 N00025	DC A(@TUXX)	
		945+	DC AL2(N00027)	
		946+	DC A(T7A19)	
		947+	DC AL2(EQ)	
		948+	DC AL2(01)	
		949+	DC X'00'	
		950+	ALIGN WORD	
		951+	DC AL2(0)	
		952+	DC C'AA'	
		953+	ALIGN WORD	
		954+	DC AL2(PARMARA)	
		955 N00026	SFIXT FT=(P00032),GTO=((7A78,A))	
		956 N00026	DC A(@SIXT)	
		957+	DC A(F00032)	
		958+	DC A(F00040)	
		959 N00027	STUXX T7A08,02,0082,ON,QT=(Q00146),YES=N00033	
		960 N00027	DC A(@TUXX)	
		961+	DC AL2(N00033)	
		962+	DC A(T7A08)	
		963+	DC AL2(ON)	
		964+	DC AL2(02)	
		965+	DC X'0082'	
		966+	ALIGN WORD	
		967+	DC AL2(0)	
		968+	DC C'AA'	
		969+	ALIGN WORD	
		970 N00028	DC AL2(PARMARA)	
		971 N00028	STUXX T7A02,04,00001000,ON,QT=(Q00151),YES=N00032,CT=(C00148)	
		972+	DC A(@TUXX)	
		973+	DC AL2(N00032)	
		974+	DC A(T7A02)	
		975+	DC AL2(ON)	
		976+	DC AL2(04)	
		977+	DC X'00001000'	
		978+	ALIGN WORD	
		979+	DC AL2(0)	
		980+	DC C'AA'	
		981+	ALIGN WORD	
		982 N00029	DC AL2(PARMARA)	
		983 N00029	STUXX T7A08,01,D5,EQ,PLNG=1,PARM=@N,QT=(Q00038),YES=N00031	
		984+	DC A(@TUXX)	
		985+	DC AL2(N00031)	
		986+	DC A(T7A08)	
		987+	DC AL2(EQ)	
		988+	DC AL2(01)	
		989+	DC X'D5'	
		990+	ALIGN WORD	
		991+	DC AL2(1)	
		992+	DC C'@N'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
0028CC	196E	992+	ALIGN WORD	
		993+	DC AL2(PARMARA)	
		994	SNVLD FT=(F00036)	
0028CE	0600	995+N00030	DC A(@NVLD)	
		996	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
0028D0	0201	997+N00031	DC A(@CALL)	
0028D2	2EE6	998+	DC A(F00040)	
0028D4	F7C1F2F1	999+	DC CL4'7A21'	
0028D8	C140	1000+	DC CL2'A'	
0028DA	0001	1001+	DC AL2(XTRNL)	
		1002	\$FIXT FT=(F00032)	
0028DC	0101	1003+N00032	DC A(@FIXT)	
0028DE	2FOA	1004+	DC A(F00032)	
		1005	STUXX T7A06,02,0400,EQ,PLNG=4,PARM=201C,QT=(Q00163),	X
0028E0	0500	1006+N00033	DC A(@TUXX)	
0028E2	2914	1007+	DC AL2(N00037)	
0028E4	35E8	1008+	DC A(T7A06)	
0028E6	0000	1009+	DC AL2(EQ)	
0028E8	0002	1010+	DC AL2(01)	
0028EA	0400	1011+	DC X'0400'	
		1012+	ALIGN WORD	
0028EC	0004	1013+	DC AL2(4)	
0028EE	F2F0F1C3	1014+	DC C'201C'	
		1015+	ALIGN WORD	
0028F2	196E	1016+	DC AL2(PARMARA)	
		1017	STUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00036	
0028F4	0500	1018+N00034	DC A(@TUXX)	
0028F6	2908	1019+	DC AL2(N00036)	
0028F8	36D4	1020+	DC A(T7A08)	
0028FA	0000	1021+	DC AL2(EQ)	
0028FC	0001	1022+	DC AL2(01)	
0028FE	C1	1023+	DC X'C1'	
0028FF	00	1024+	ALIGN WORD	
002900	0001	1025+	DC AL2(1)	
002902	7CC1	1026+	DC C'@A'	
		1027+	ALIGN WORD	
002904	196E	1028+	DC AL2(PARMARA)	
		1029	SNVLD FT=(F00036)	
002906	0600	1030+N00035	DC A(@NVLD)	
		1031	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
002908	0201	1032+N00036	DC A(@CALL)	
00290A	2EE6	1033+	DC A(F00040)	
00290C	F7C1F2F1	1034+	DC CL4'7A21'	
00290E	C140	1035+	DC CL2'A'	
002910	0001	1036+	DC AL2(XTRNL)	
		1037	STUXX T7A06,01,80,EQ,PLNG=09,PARM=0000/0401,QT=(Q00178),	X
002914	0500	1038+N00037	DC A(@TUXX)	
002916	2968	1039+	DC AL2(N00043)	
002918	35E8	1040+	DC A(T7A06)	
00291A	0000	1041+	DC AL2(EQ)	
00291C	0001	1042+	DC AL2(01)	
00291E	80	1043+	DC X'80'	
00291F	00	1044+	ALIGN WORD	
002920	0009	1045+	DC AL2(09)	
002922	F0F0F0F061F0F4F0F	1046+	DC C'0000/0401'	
00292B	00	1047+	ALIGN WORD	
00292C	196E	1048+	DC AL2(PARMARA)	
		1049	STUXX T7A02,06,000000004000,OF,QT=(Q00181),YES=N00042,	X
00292E	0500	1050+N00038	DC A(@TUXX)	
002930	2964	1051+	DC AL2(N00042)	
002932	2FC2	1052+	DC A(T7A02)	
002934	0202	1053+	DC AL2(EQ)	
002936	0006	1054+	DC AL2(06)	
002938	000000004000	1055+	DC X'000000004000'	
		1056+	ALIGN WORD	
00293E	0000	1057+	DC AL2(0)	
002940	C1C1	1058+	DC C'AA'	
		1059+	ALIGN WORD	
002942	196E	1060+	DC AL2(PARMARA)	
		1061	STUXX T7A08,01,C6,EQ,PLNG=1,PARM=@F,QT=(Q00038),YES=N00041	
002944	0500	1062+N00039	DC A(@TUXX)	
002946	2958	1063+	DC AL2(N00041)	
002948	36D4	1064+	DC A(T7A08)	
00294A	0000	1065+	DC AL2(EQ)	
00294C	0001	1066+	DC AL2(01)	
00294E	C6	1067+	DC X'C6'	
00294F	00	1068+	ALIGN WORD	
002950	0001	1069+	DC AL2(1)	
002952	7CC6	1070+	DC C'@F'	
		1071+	ALIGN WORD	
002954	196E	1072+	DC AL2(PARMARA)	
		1073	SNVLD FT=(F00036)	
002956	0600	1074+N00040	DC A(@NVLD)	
		1075	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
002958	0201	1076+N00041	DC A(@CALL)	
00295A	2EE6	1077+	DC A(F00040)	
00295C	F7C1F2F1	1078+	DC CL4'7A21'	
00295E	C140	1079+	DC CL2'A'	
002962	0001	1080+	DC AL2(XTRNL)	
		1081	\$FIXT FT=(F00032)	
002964	0101	1082+N00042	DC A(@FIXT)	
002966	2FOA	1083+	DC A(F00032)	
		1084	STUXX T7A06,2,0401,EQ,PLNG=4,PARM=201C,QT=(Q00193),YES=N00047,X	
002968	0500	1085+N00043	DC A(@TUXX)	
00296E	299C	1086+	DC AL2(N00047)	
00296C	35E8	1087+	DC A(T7A06)	
00296F	0000	1088+	DC AL2(EQ)	
002970	0002	1089+	DC AL2(2)	
002972	0401	1090+	DC X'0401'	
		1091+	ALIGN WORD	
002974	0004	1092+	DC AL2(4)	
002976	F2F0F1C3	1093+	DC C'201C'	
		1094+	ALIGN WORD	
00297A	196E	1095+	DC AL2(PARMARA)	
		1096	STUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00046	
00297C	0500	1097+N00044	DC A(@TUXX)	
00297E	2990	1098+	DC AL2(N00046)	
002980	36D4	1099+	DC A(T7A08)	
002982	0000	1100+	DC AL2(EQ)	
002984	0001	1101+	DC AL2(01)	
002986	C1	1102+	DC X'C1'	
002987	00	1103+	ALIGN WORD	
002988	0001	1104+	DC AL2(1)	
00298A	7CC1	1105+	DC C'@A'	

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
00298C	196E	1106+	ALIGN WORD	
		1107+	DC AL2(PARMARA)	
		1108	SNVLD FT=(F00036)	
00298E	0600	1109+N00045	DC A(@NVLD)	
		1110	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
002990	0201	1111+N00046	DC A(@CALL)	
002992	2EE6	1112+	DC A(F00040)	
002994	F7C1F2F1	1113+	DC CL4'7A21'	
002996	C140	1114+	DC CL2'A'	
00299A	0001	1115+	DC AL2(XTRNL)	
		1116	STUXX T7A06,01,80,EQ,PLNG=09,PARM=0000/0400,QT=(Q00006),	X
00299C	0500	1117+N00047	DC A(@TUXX)	
00299E	29BA	1118+	DC AL2(N00049)	
0029A0	35E8	1119+	DC A(T7A06)	
0029A2	0000	1120+	DC AL2(EQ)	
0029A4	0001	1121+	DC AL2(01)	
0029A6	80	1122+	DC X'80'	
0029A8	00	1123+	ALIGN WORD	
0029AA	0009	1124+	DC AL2(09)	
0029AC	F0F0F0F061F0F4F0F	1125+	DC C'0000/0400'	
0029AE	00	1126+	ALIGN WORD	
0029B0	196E	1127+	DC AL2(PARMARA)	
		1128	\$FIXT FT=(F00032),GTO=((7A78,A))	
0029B2	0101	1129+N00048	DC A(@FIXT)	
0029B4	2FOA	1130+	DC A(F00032)	
		1131	STUXX T7A02,01,80,EQ,QT=(Q00212),YES=N00055,CT=(C00211)	
0029B6	0500	1132+N00049	DC A(@TUXX)	
0029B8	2A06	1133+	DC AL2(N00055)	
0029BA	2FC2	1134+	DC A(T7A02)	
0029BC	0000	1135+	DC AL2(EQ)	
0029BE	0001	1136+	DC AL2(01)	
0029C0	80	1137+	DC X'80'	
0029C2	00	1138+	ALIGN WORD	
0029C4	0000	1139+	DC AL2(0)	
0029C6	0000	1140+	DC C'AA'	
0029C8	C1C1	1141+	ALIGN WORD	
		1142+	DC AL2(PARMARA)	
0029CA	196E	1143	STUXX T7A02,06,000000004000,ON,QT=(Q00216),YES=N00054,	X
		1144+N00050	DC A(@TUXX)	
0029CC	0500	1145+	DC AL2(N00054)	
0029CE	2A02	1146+	DC A(T7A02)	
0029D0	2FC2	1147+	DC AL2(ON)	
0029D2	0200	1148+	DC AL2(06)	
0029D4	0006	1149+	DC X'000000004000'	
		1150+	ALIGN WORD	
0029DC	0000	1151+	DC AL2(0)	
0029DE	C1C1	1152+	DC C'AA'	
		1153+	ALIGN WORD	
0029E0	196E	1154+	DC AL2(PARMARA)	
		1155	STUXX T7A08,01,C2,EQ,PLNG=1,PARM=@B,QT=(Q00038),YES=N00053	
0029E2	0500	1156+N00051	DC A(@TUXX)	
0029E4	29F6	1157+	DC AL2(N00053)	
0029E6	36D4	1158+	DC A(T7A08)	
0029E8	0000	1159+	DC AL2(EQ)	
0029EA	0001	1160+	DC AL2(01)	
0029EC	C2	1161+	DC X'C2'	
0029EE	00	1162+	ALIGN WORD	
0029F0	7CC2	1163+	DC AL2(1)	
		1164+	DC C'@B'	
		1165+	ALIGN WORD	
0029F2	196E	1166+	DC AL2(PARMARA)	
		1167	SNVLD FT=(F00036)	
0029F4	0600	1168+N00052	DC A(@NVLD)	
		1169	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
0029F6	0201	1170+N00053	DC A(@CALL)	
0029F8	2EE6	1171+	DC A(F00040)	
0029FA	F7C1F2F1	1172+	DC CL4'7A21'	
0029FC	C140	1173+	DC CL2'A'	
0029FE	0001	1174+	DC AL2(XTRNL)	
		1175	\$FIXT FT=(F00032)	
002A00	0101	1176+N00054	DC A(@FIXT)	
002A02	2FOA	1177+	DC A(F00032)	
		1178	STUXX T7A06,02,0400,EQ,PLNG=4,PARM=201C,QT=(Q00228),YES=N00059,X	
002A04	0500	1179+N00055	DC A(@TUXX)	
002A06	2A3A	1180+	DC AL2(N00059)	
002A08	35E8	1181+	DC A(T7A06)	
002A0A	0000	1182+	DC AL2(EQ)	
002A0C	0002	1183+	DC AL2(2)	
002A0E	0400	1184+	DC X'0400'	
		1185+	ALIGN WORD	
002A12	0004	1186+	DC AL2(4)	
002A14	F2F0F1C3	1187+	DC C'201C'	
		1188+	ALIGN WORD	
002A18	196E	1189+	DC AL2(PARMARA)	
		1190	STUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00058	
002A1A	0500	1191+N00056	DC A(@TUXX)	
002A1C	2A2E	1192+	DC AL2(N00058)	
002A1E	36D4	1193+	DC A(T7A08)	
002A20	0000	1194+	DC AL2(EQ)	
002A22	0001	1195+	DC AL2(01)	
002A24	C1	1196+	DC X'C1'	
002A26	00	1197+	ALIGN WORD	
002A28	7CC1	1198+	DC AL2(1)	
		1199+	DC C'@A'	
		1200+	ALIGN WORD	
002A2A	196E	1201+	DC AL2(PARMARA)	
		1202	SNVLD FT=(F00036)	
002A2C	0600	1203+N00057	DC A(@NVLD)	
		1204	SCALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
002A2E	0201	1205+N00058	DC A(@CALL)	
002A30	2EE6	1206+	DC A(F00040)	
002A32	F7C1F2F1	1207+	DC CL4'7A21'	
002A34	C140	1208+	DC CL2'A'	
002A36	0001	1209+	DC AL2(XTRNL)	
		1210	STUXX T7A06,01,82,EQ,PLNG=4,PARM=0001,QT=(Q00243),YES=N00065,X	
002A3A	0500	1211+N00059	DC A(@TUXX)	
002A3C	2A3C	1212+	DC AL2(N00065)	
002A3E	35E8	1213+	DC A(T7A06)	
002A40	0000	1214+	DC AL2(EQ)	
002A42	0001	1215+	DC AL2(01)	
002A44	82	1216+	DC X'82'	
002A46	00	1217+	ALIGN WORD	
002A48	0004	1218+	DC AL2(4)	
		1219+	DC C'0001'	

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002A4C 196E 1220+ ALIGN WORD
1221+ DC AL2 (PARMARA)
1222 N00060 \$TUXX T7A02,06,000000004000,ON,QT=(Q00006),YES=N00062
1223+N00060 DC A (@TUXX)
1224+ DC AL2 (N00062)
1225+ DC A (T7A02)
1226+ DC AL2 (ON)
1227+ DC AL2 (06)
1228+ DC X*000000004000*

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
002B0E 36D4 1334+ DC A (T7A08)
002B10 0000 1335+ DC AL2 (EQ)
002B12 0001 1336+ DC AL2 (01)
002B14 D9 1337+ DC X'D9'

I7A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 07

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002BCA	35E8	1448+	DC A(T7A06)	
002BCC	0000	1449+	DC AL2(EQ)	
002BCE	0002	1450+	DC AL2(O2)	
002BD0	0567	1451+	DC X'0567'	
		1452+	ALIGN WORD	
002BD2	0004	1453+	DC AL2(4)	
002BD4	F2F0F1C3	1454+	DC C'201C'	
		1455+	ALIGN WORD	
002BD8	196E	1456+	DC AL2(PARMARA)	
		1457 N00090	\$TUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00092	
002BDA	0500	1458+N00090	DC A(@TUXX)	
002BDC	2BEE	1459+	DC AL2(N00092)	
002BDE	36D4	1460+	DC A(T7A08)	
002BE0	0000	1461+	DC AL2(EQ)	
002BE2	0001	1462+	DC AL2(O1)	
002BE4	C1	1463+	DC X'C1'	
002BE5	00	1464+	ALIGN WORD	
002BE6	0001	1465+	DC AL2(1)	
002BE8	7CC1	1466+	DC C'AA'	
		1467+	ALIGN WORD	
002BEA	196E	1468+	DC AL2(PARMARA)	
		1469 N00091	\$NVLD FT=(F00036)	
002BEC	0600	1470+N00091	DC A(@NVLD)	
		1471 N00092	\$CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		1472+N00092	DC A(@CALL)	
002BEE	0201	1473+	DC A(F00040)	
002BF0	2EE6	1474+	DC CL4'7A21'	
002BF2	F7C1F2F1	1475+	DC CL2'A'	
002BF6	C140	1476+	DC AL2(XTRNL)	
002BF8	0001	1477 N00093	\$TUXX T7A06,01,80,EQ,PLNG=9,PARM=0000/0400,QT=(Q00006),	X
		1478+N00093	DC A(@TUXX)	
002BFA	0500	1479+	DC AL2(N00095)	
002BFC	2C18	1480+	DC A(T7A06)	
002BFE	35E8	1481+	DC AL2(EQ)	
002C00	0000	1482+	DC AL2(O1)	
002C02	0001	1483+	DC X'80'	
002C04	80	1484+	ALIGN WORD	
002C05	00	1485+	DC AL2(9)	
002C06	0009	1486+	DC C'0000/0400'	
002C08	F0F0F0F061F0F4F0F	1487+	ALIGN WORD	
002C11	00	1488+	DC AL2(PARMARA)	
002C12	196E	1489 N00094	\$FIXT FT=(F00032),GTO=((7A78,A))	
		1490+N00094	DC A(@FIXT)	
		1491+	DC A(F00032)	
002C14	0101	1492 N00095	\$TUXX T7A02,01,80,EQ,QT=(Q00365),YES=N00101,CT=(C00363)	
002C16	2FOA	1493+N00095	DC A(@TUXX)	
		1494+	DC AL2(N00101)	
002C18	0500	1495+	DC A(T7A02)	
002C1A	2C64	1496+	DC AL2(EQ)	
002C1C	2FC2	1497+	DC AL2(O1)	
002C1E	0000	1498+	DC X'80'	
002C20	0001	1499+	ALIGN WORD	
002C22	80	1500+	DC AL2(O)	
002C23	00	1501+	DC C'AA'	
002C24	0000	1502+	ALIGN WORD	
002C26	C1C1	1503+	DC AL2(PARMARA)	
002C28	196E	1504 N00096	\$TUXX T7A02,06,000000004000,OF,QT=(Q00369),YES=N00100,	X
		1505+N00096	DC A(@TUXX)	
002C2A	0500	1506+	DC AL2(N00100)	
002C2C	2C60	1507+	DC A(T7A02)	
002C2E	2FC2	1508+	DC AL2(OF)	
002C30	0202	1509+	DC AL2(O6)	
002C32	0006	1510+	DC X'000000004000'	
002C34	000000004000	1511+	ALIGN WORD	
		1512+	DC AL2(O)	
002C3A	0000	1513+	DC C'AA'	
002C3C	C1C1	1514+	ALIGN WORD	
002C3E	196E	1515+	DC AL2(PARMARA)	
		1516 N00097	\$TUXX T7A08,01,C9,EQ,PLNG=1,PARM=@I,QT=(Q00038),YES=N00099	
002C40	0500	1517+N00097	DC A(@TUXX)	
002C42	2C54	1518+	DC AL2(N00099)	
002C44	36D4	1519+	DC A(T7A08)	
002C46	0000	1520+	DC AL2(EQ)	
002C48	0001	1521+	DC AL2(O1)	
002C4A	C9	1522+	DC X'C9'	
002C4B	00	1523+	ALIGN WORD	
002C4C	0001	1524+	DC AL2(1)	
002C4E	7CC9	1525+	DC C'AI'	
		1526+	ALIGN WORD	
002C50	196E	1527+	DC AL2(PARMARA)	
		1528 N00098	\$NVLD FT=(F00036)	
002C52	0600	1529+N00098	DC A(@NVLD)	
		1530 N00099	\$CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		1531+N00099	DC A(@CALL)	
002C54	0201	1532+	DC A(F00040)	
002C56	2EE6	1533+	DC CL4'7A21'	
002C58	F7C1F2F1	1534+	DC CL2'A'	
002C5C	C140	1535+	DC AL2(XTRNL)	
002C5E	0001	1536 N00100	\$FIXT FT=(F00032)	
		1537+N00100	DC A(@FIXT)	
		1538+	DC A(F00032)	
002C60	0101	1539 N00101	\$TUXX T7A06,02,0400,EQ,PLNG=04,PARM=201C,QT=(Q00382),	Y
002C62	2FOA	1540+N00101	DC A(@TUXX)	
		1541+	DC AL2(N00105)	
002C64	0500	1542+	DC A(T7A06)	
002C66	2C98	1543+	DC AL2(EQ)	
002C68	35E8	1544+	DC AL2(O2)	
002C6A	0000	1545+	DC X'0400'	
002C6C	0002	1546+	ALIGN WORD	
002C6E	0400	1547+	DC AL2(O4)	
		1548+	DC C'201C'	
002C70	0004	1549+	ALIGN WORD	
002C72	F2F0F1C3	1550+	DC AL2(PARMARA)	
		1551 N00102	\$TUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00104	
002C74	0500	1552+N00102	DC A(@TUXX)	
002C76	196E	1553+	DC AL2(N00104)	
		1554+	DC A(T7A08)	
002C78	0000	1555+	DC AL2(EQ)	
002C7A	2C8C	1556+	DC AL2(O1)	
002C7C	36D4	1557+	DC X'C1'	
002C7E	0000	1558+	ALIGN WORD	
002C80	0001	1559+	DC AL2(1)	
002C82	C1	1560+	DC C'AA'	
002C83	00	1561+	ALIGN WORD	
002C84	0001			
002C86	7CC1			

I7A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 07A

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
002C88	196E	1562+	DC AL2(PARMARA)	
		1563 N00103	\$NVLD FT=(F00036)	
002C8A	0600	1564+N00103	DC A(@NVLD)	
		1565 N00104	\$CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		1566+N00104	DC A(@CALL)	
002C8C	0201	1567+	DC A(F00040)	
002C8E	2EE6	1568+	DC CL4'7A21'	
002C90	F7C1F2F1	1569+	DC CL2'A'	
002C94	C140	1570+	DC AL2(XTRNL)	
002C96	0001	1571 N00105	\$TUXX T7A06,01,80,EQ,PLNG=9,PARM=0000/0567,QT=(Q00006),	X
		1572+N00105	DC A(@TUXX)	
002C98	0500	1573+	DC AL2(N00107)	
002C9A	2CB6	1574+	DC A(T7A06)	
002C9C	35E8	1575+	DC AL2(EQ)	
002C9E	0000	1576+	DC AL2(O1)	
002CA0	0001	1577+	DC X'80'	
002CA2	80	1578+	ALIGN WORD	
002CA4	00	1579+	DC AL2(9)	
002CA6	F0F0F0F061F0F5F6F	1580+	DC C'0000/0567'	
002CA8	00	1581+	ALIGN WORD	
002CB0	196E	1582+	DC AL2(PARMARA)	
		1583 N00106	\$FIXT FT=(F00032),GTO=((7A78,A))	
002CB2	0101	1584+N00106	DC A(@FIXT)	
002CB4	2FOA	1585+	DC A(F00032)	
		1586 N00107	\$TUXX T7A02,01,80,EQ,QT=(Q00399),YES=N00113,CT=(C00398)	
002CB6	0500	1587+N00107	DC A(@TUXX)	
002CB8	2D00	1588+	DC AL2(N00113)	
002CBA	2FC2	1589+	DC A(T7A02)	
002CBC	0000	1590+	DC AL2(EQ)	
002CBE	0001	1591+	DC AL2(O1)	
002CBF	80	1592+	DC X'80'	
002CC1	00	1593+	ALIGN WORD	
002CC2	0000	1594+	DC AL2(O)	
002CC4	C1C1	1595+	DC C'AA'	
		1596+	ALIGN WORD	
002CC6	196E	1597+	DC AL2(PARMARA)	
		1598 N00108	\$TUXX T7A02,04,00000100,ON,QT=(Q00403),YES=N00112,CT=(C00401)	
002CC8	0500	1599+N00108	DC A(@TUXX)	
002CCA	2CFC	1600+	DC AL2(N00112)	
002CCB	2FC2	1601+	DC A(T7A02)	
002CCD	0200	1602+	DC AL2(ON)	
002CCE	0004	1603+	DC AL2(O4)	
002CD2	00000100	1604+	DC X'00000100'	
		1605+	ALIGN WORD	
002CD6	0000	1606+	DC AL2(O)	
002CD8	C1C1	1607+	DC C'AA'	
		1608+	ALIGN WORD	
002CDA	196E	1609+	DC AL2(PARMARA)	
		1610 N00109	\$TUXX T7A08,01,D6,EQ,PLNG=1,PARM=@O,QT=(Q00038),YES=N00111	
002CDC	0500	1611+N00109	DC A(@TUXX)	
002CDE	2CF0	1612+	DC AL2(N00111)	
002CE0	36D4	1613+	DC A(T7A08)	
002CE2	0000	1614+	DC AL2(EQ)	
002CE4	0001	1615+	DC AL2(O1)	
002CE6	80	1616+	DC X'80'	
002CE8	00	1617+	ALIGN WORD	
002CEA	0001	1618+	DC AL2(1)	
002CEB	7CD6	1619+	DC C'AO'	
		1620+	ALIGN WORD	
002CEC	196E	1621+	DC AL2(PARMARA)	
		1622 N00110	\$NVLD FT=(F00036)	
002CEE	0600	1623+N00110	DC A(@NVLD)	
		1624 N00111	\$CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))	
		1625+N00111	DC A(@CALL)	
002CF0	0201	1626+	DC A(F00040)	
002CF2	2EE6	1627+	DC CL4'7A21'	
002CF4	F7C1F2F1	1628+	DC CL2'A'	
002CF6	C140	1629+	DC AL2(XTRNL)	
002CFA	0001	1630 N00112	\$FIXT FT=(F00032)	
		1631+N00112	DC A(@FIXT)	
002CFE	2FOA	1632+	DC A(F00032)	
		1633 N00113	\$TUXX T7A06,01,82,EQ,PLNG=04,PARM=0001,QT=(Q00006),YES=N00115,X	
		1634+N00113	DC A(@TUXX)	
002D00	0500	1635+	DC AL2(N00115)	
002D02	2D18	1636+	DC A(T7A06)	
002D04	35E8	1637+	DC AL2(EQ)	
002D06	0000	1638+	DC AL2(O1)	
002D08	0001	1639+	DC X'82'	
002D0A	82	1640+	ALIGN WORD	
002D0C	00	1641+	DC AL2(O4)	
002D0E	F0F0F0F1	1642+	DC C'0001'	
		1643+	ALIGN WORD	
002D12	196E	1644+	DC AL2(PARMARA)	
		1645 N00114	\$FIXT FT=(F00032),GTO=((7A78,A))	
002D14	0101	1646+N00114	DC A(@FIXT)	
002D16	2FOA	1647+	DC A(F00032)	
		1648 N00115	\$TUXX T7A02,01,82,EQ,QT=(Q00422),YES=N00121,CT=(C00420)	
		1649+N00115	DC A(@TUXX)	
002D18	0500	1650+	DC AL2(N00121)	
002D1A	2D64	1651+	DC A(T7A02)	
002D1C	2FC2	1652+	DC AL2(EQ)	
002D1E	0000	1653+	DC AL2(O1)	
002D20	0001	1654+	DC X'82'	
002D22	82	1655+	ALIGN WORD	
002D24	00	1656+	DC AL2(O)	
002D26	C1C1	1657+	DC C'AA'	
		1658+	ALIGN WORD	
002D28	196E	1659+	DC AL2(PARMARA)	
		1660 N00116	\$TUXX T7A02,06,000000004000,OF,QT=(Q00427),YES=N00120,	X
002D2A	0500	1661+N00116	DC A(@TUXX)	
002D2C	2D60	1662+	DC AL2(N00120)	
002D2E	2FC2	1663+	DC A(T7A02)	
002D30	0202	1664+	DC AL2(OF)	
002D32	0006	1665+	DC AL2(O6)	
002D34	000000004000	1666+	DC X'000000004000'	
		1667+	ALIGN WORD	
002D3A	0000	1668+	DC AL2(O)	
002D3C	C1C1	1669+	DC C'AA'	
		1670+	ALIGN WORD	
002D3E	196E	1671+	DC AL2(PARMARA)	
		1672 N00117	\$TUXX T7A08,01,D9,EQ,PLNG=1,PARM=@R,QT=(Q00038),YES=N00119	
002D40	0500	1673+N00117	DC A(@TUXX)	
002D42	2D54	1674+	DC AL2(N00119)	
002D44	36D4	1675+	DC A(T7A08)	

I7A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 08

LOCTR OBJECT TEXT STMT SOURCE STATEMENT

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002D46 0000 1676+ DC AL2(EQ)
002D48 0001 1677+ DC AL2(O)
002D4A D9 1678+ DC AL2(O)
002D4B 00 1679+ DC AL2(O)
002D4C 0001 1680+ DC AL2(1)
002D4E 7CD9 1681+ DC C'@R'
1682+ DC AL2(PARMARA)
002D50 196E 1683+ DC AL2(PARMARA)
1684 N00118 $NVLD FT=(F00036)
1685 N00118 DC A(@NVLD)
002D52 0600 1686 N00119 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1687 N00119 DC A(@CALL)
002D54 0201 1688+ DC A(F00040)
002D56 2EE6 1689+ DC CL4'7A21'
002D58 F7C1F2F1 1690+ DC CL2'A'
002D5C C140 1691+ DC AL2(XTRNL)
002D5E 0001 1692 N00120 $FIXT FT=(F00032)
1693 N00120 DC A(@FIXT)
002D60 0101 1694+ DC A(F00032)
002D62 2FOA 1695 N00121 $TUXX T7A06,02,0400,EQ,PLNG=4,PARM=201C,QT=(Q00438),
1696 N00121 DC A(@TUXX)
002D64 0500 1697+ DC AL2(N00125)
002D66 2D98 1698+ DC A(T7A06)
002D68 35E8 1699+ DC AL2(EQ)
002D6A 0000 1700+ DC AL2(O)
002D6C 0002 1701+ DC X'400'
002D6E 0400 1702+ DC AL2(4)
002D70 0004 1703+ DC C'201C'
002D72 F2F0F1C3 1704+ DC AL2(PARMARA)
002D76 196E 1705+ DC AL2(PARMARA)
1706+ DC A(@GOTO)
002D78 0500 1707 N00122 $TUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00124
1708 N00122 DC A(@TUXX)
002D7A 2D8C 1709+ DC AL2(N00124)
002D7C 36D4 1710+ DC A(T7A08)
002D7E 0000 1711+ DC AL2(EQ)
002D80 0001 1712+ DC AL2(O)
002D82 C1 1713+ DC X'4'
002D83 00 1714+ DC AL2(1)
002D84 0001 1715+ DC C'@A'
002D86 7CC1 1716+ DC AL2(PARMARA)
002D88 196E 1717+ DC AL2(PARMARA)
1718+ DC $NVLD FT=(F00036)
002D8A 0600 1719 N00123 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1720 N00123 DC A(@NVLD)
1721 N00124 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1722 N00124 DC A(@CALL)
002D8C 0201 1723+ DC A(F00040)
002D8E 2EE6 1724+ DC CL4'7A21'
002D90 F7C1F2F1 1725+ DC CL2'A'
002D94 C140 1726+ DC AL2(XTRNL)
002D96 0001 1727 N00125 $TUXX T7A09,02,00E0,OF,QT=(Q00457),YES=N00137,CT=(C00449),
1728 N00125 DC A(@TUXX)
002D98 0500 1729+ DC AL2(N00137)
002D9A 2E34 1730+ DC A(T7A09)
002D9C 376A 1731+ DC AL2(OF)
002D9E 0202 1732+ DC AL2(O)
002DA0 0000 1733+ DC X'00E0'
002DA2 00E0 1734+ DC AL2(PARMARA)
002DA4 0000 1735+ DC AL2(O)
002DA6 C1C1 1736+ DC C'@A'
002DA8 196E 1737+ DC AL2(PARMARA)
1738+ DC $TUXX T7A02,01,04,OF,QT=(Q00458),YES=N00130
1739 N00126 $TUXX T7A02,01,04,OF,QT=(Q00458),YES=N00130
1740 N00126 DC A(@TUXX)
002DAA 0500 1741+ DC AL2(N00130)
002DAC 2DDC 1742+ DC A(T7A02)
002DAE 2FC2 1743+ DC AL2(OF)
002DB0 0202 1744+ DC AL2(O)
002DB2 0001 1745+ DC X'04'
002DB4 04 1746+ DC AL2(1)
002DB5 00 1747+ DC C'@X'
002DB6 0000 1748+ DC AL2(PARMARA)
002DB8 C1C1 1749+ DC AL2(PARMARA)
1750+ DC $TUXX T7A08,01,E7,EQ,PLNG=1,PARM=@X,QT=(Q00038),YES=N00129
1751 N00127 $TUXX T7A08,01,E7,EQ,PLNG=1,PARM=@X,QT=(Q00038),YES=N00129
1752 N00127 DC A(@TUXX)
002DBC 0500 1753+ DC AL2(N00129)
002DBE 2DD0 1754+ DC A(T7A08)
002DBF 36D4 1755+ DC AL2(EQ)
002DC0 0000 1756+ DC AL2(O)
002DC2 0000 1757+ DC X'E7'
002DC4 0001 1758+ DC AL2(1)
002DC6 E7 1759+ DC AL2(PARMARA)
002DC7 00 1760+ DC AL2(PARMARA)
002DC8 0001 1761+ DC AL2(PARMARA)
002DCA 7CE7 1762+ DC $NVLD FT=(F00036)
002DCC 196E 1763 N00128 $CALL TYPE=XTRNL,MAP=7A28,EP=A,FT=(F00040),GTO=((7A28,A))
1764 N00128 DC A(@NVLD)
1765 N00129 $CALL TYPE=XTRNL,MAP=7A28,EP=A,FT=(F00040),GTO=((7A28,A))
1766 N00129 DC A(@CALL)
002DD0 0201 1767+ DC A(F00040)
002DD2 2EE6 1768+ DC CL4'7A28'
002DD4 F7C1F2F8 1769+ DC CL2'A'
002DD8 C140 1770+ DC AL2(XTRNL)
002DDA 0001 1771 N00130 $TUXX T7A02,06,000000004000,OF,QT=(Q00006),YES=N00132
1772 N00130 DC A(@TUXX)
002DDE 2DF6 1773+ DC AL2(N00132)
002DE0 2FC2 1774+ DC A(T7A02)
002DE2 0202 1775+ DC AL2(OF)
002DE4 0006 1776+ DC AL2(O)
002DE6 000000004000 1777+ DC X'000000004000'
002DEC 0000 1778+ DC AL2(PARMARA)
002DEE C1C1 1779+ DC AL2(O)
1780+ DC C'@A'
002DF0 196E 1781+ DC AL2(PARMARA)
1782+ DC $FIXT FT=(F00032),GTO=((7A78,A))
1783 N00131 $FIXT FT=(F00032),GTO=((7A78,A))
1784 N00131 DC A(@FIXT)
002DF2 0101 1785+ DC A(F00032)
002DF4 2FOA 1786 N00132 $TUXX T7A02,02,0020,OF,QT=(Q00473),YES=N00136
1787 N00132 DC A(@TUXX)
002DF6 0500 1788+ DC AL2(N00136)
002DF8 2E28 1789+ DC A(T7A02)
002DFA 2FC2 1789+ DC A(T7A02)

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I7A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 08A

LOCTR OBJECT TEXT STMT SOURCE STATEMENT

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002DFC 0202 1790+ DC AL2(OF)
002DFE 0002 1791+ DC AL2(O)
002E00 0020 1792+ DC X'0020'
1793+ DC AL2(PARMARA)
002E02 0000 1794+ DC AL2(O)
002E04 C1C1 1795+ DC C'@A'
1796+ DC AL2(PARMARA)
002E06 196E 1797+ DC AL2(PARMARA)
1798 N00133 $TUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00135
1799 N00133 DC A(@TUXX)
002E08 0500 1800+ DC AL2(N00135)
002E0A 2E1C 1801+ DC A(T7A08)
002E0C 36D4 1802+ DC AL2(EQ)
002E0E 0000 1803+ DC AL2(O)
002E10 0001 1804+ DC X'C1'
002E12 C1 1805+ DC AL2(1)
002E13 00 1806+ DC C'@A'
002E14 0001 1807+ DC AL2(PARMARA)
002E16 7CC1 1808+ DC AL2(PARMARA)
1809+ DC $NVLD FT=(F00036)
002E18 196E 1810 N00134 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1811 N00134 DC A(@NVLD)
1812 N00135 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1813 N00135 DC A(@CALL)
002E1C 0201 1814+ DC A(F00040)
002E1E 2EE6 1815+ DC CL4'7A21'
002E20 F7C1F2F1 1816+ DC CL2'A'
002E24 C140 1817+ DC AL2(XTRNL)
002E26 0001 1818 N00136 $GOTO TYPE=XTRNL,EP=B,MAP=7A20,FT=(F00483)
1819 N00136 DC A(@GOTO)
002E28 0200 1820+ DC A(F00483)
002E2A 2F34 1821+ DC CL4'7A20'
002E2C F7C1F2F0 1822+ DC C1'2'B'
002E30 C240 1823+ DC AL2(INTRNL)
002E32 0000 1824 N00137 $TUXX T7A08,04,00000400,ON,QT=(Q00486),YES=N00139
1825 N00137 DC A(@TUXX)
002E34 0500 1826+ DC AL2(N00139)
002E36 2E4C 1827+ DC A(T7A08)
002E38 36D4 1828+ DC AL2(ON)
002E3A 0200 1829+ DC AL2(O)
002E3C 0004 1830+ DC X'00000400'
002E3E 00000400 1831+ DC AL2(PARMARA)
1832+ DC AL2(O)
002E42 0000 1833+ DC C'@A'
002E44 C1C1 1834+ DC AL2(PARMARA)
002E46 196E 1835+ DC AL2(PARMARA)
1836 N00138 $STOP FT=(F00009),GTO=((7A40,A)),CT=(C00041)
1837 N00138 DC A(@STOP)
002E48 0102 1838+ DC A(F00009)
002E4A 2F4E 1839 N00139 $TUXX T7A06,01,00,EQ,PLNG=9,PARM=0000/41FF,QT=(Q00006),
1840 N00139 DC A(@TUXX)
002E4C 0500 1841+ DC AL2(N00141)
002E4E 2E6A 1842+ DC A(T7A06)
002E50 35E8 1843+ DC AL2(EQ)
002E52 0000 1844+ DC AL2(O)
002E54 0001 1845+ DC X'00'
002E56 00 1846+ DC AL2(PARMARA)
002E57 00 1847+ DC AL2(PARMARA)
002E58 0009 1848+ DC C'0000/41FF'
002E5A F0F0F0F061F4F1C6C 1849+ DC AL2(PARMARA)
002E63 00 1850+ DC AL2(PARMARA)
002E64 196E 1851 N00140 $FIXT FT=(F00032),GTO=((7A78,A))
1852 N00140 DC A(@FIXT)
002E66 0101 1853+ DC A(F00032)
002E68 2FOA 1854 N00141 $TUXX T7A06,02,41FF,EQ,PLNG=4,PARM=201C,QT=(Q00501),
1855 N00141 DC A(@TUXX)
002E6A 0500 1856+ DC AL2(N00145)
002E6C 2E9E 1857+ DC A(T7A06)
002E6E 35E8 1858+ DC AL2(EQ)
002E70 0800 1859+ DC AL2(O)
002E72 0002 1860+ DC X'41FF'
002E74 41FF 1861+ DC AL2(PARMARA)
1862+ DC AL2(4)
002E76 0004 1863+ DC C'201C'
002E78 F2F0F1C3 1864+ DC AL2(PARMARA)
1865+ DC $TUXX T7A08,01,C1,EQ,PLNG=1,PARM=@A,QT=(Q00038),YES=N00144
1866 N00142 DC A(@TUXX)
002E7E 0500 1867+ DC AL2(N00144)
002E80 2E92 1868+ DC A(T7A08)
002E82 36D4 1869+ DC AL2(EQ)
002E84 0000 1870+ DC AL2(O)
002E86 0001 1871+ DC X'C1'
002E88 C1 1872+ DC AL2(1)
002E89 00 1873+ DC AL2(PARMARA)
002E8A 0001 1874+ DC AL2(PARMARA)
002E8C 7CC1 1875+ DC C'@A'
1876+ DC AL2(PARMARA)
002E8E 196E 1877+ DC AL2(PARMARA)
1878 N00143 $NVLD FT=(F00036)
1879 N00143 DC A(@NVLD)
002E90 0600 1880 N00144 $CALL TYPE=XTRNL,MAP=7A21,EP=A,FT=(F00040),GTO=((7A21,A))
1881 N00144 DC A(@CALL)
002E92 0201 1882+ DC A(F00040)
002E94 2EE6 1883+ DC CL4'7A21'
002E96 F7C1F2F1 1884+ DC CL2'A'
002E9A C140 1885+ DC AL2(XTRNL)
002E9C 0001 1886 N00145 $STOP FT=(F00009),GTO=((7A40,A)),CT=(C00041)
1887 N00145 DC A(@STOP)
002E9E 0102 1888+ DC A(F00009)
002EA0 2F4E 1889+ DC AL2(DUMMY)
002EA2 0000 1890 ENTPT EQU *
002EA4 0000 1891 *****
1892 *****
1893 *****
1894 ** ENTRY POINT TABLE **
1895 **
1896 *****
1897 *****
1898 ENTPT EP=A,STEP=00001
1899+ DC CL2'A'
1900+ DC A(N00001)
1901+ DC AL2(DUMMY)
1902 *****
1903 *****

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17A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 09

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976

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1904 **
1905 ** MESSAGE TABLE **
1906 **
1907 *****
1908 *****
1909 F00046 EQU *
1910 DC AL2(0001)
1911 DC A(0016)
1912 DC CL0016'NO FILE ATTACHED'
1913 F00036 EQU *
1914 DC AL2(0001)
1915 DC A(0036)
1916 DC CL0036'NO IS INVALID PROCEED TO NEXT STEP. '
1917 F00040 EQU *
1918 DC AL2(0001)
1919 DC A(0032)
1920 DC CL0032'EXECUTE MAP 7A20 IN MANUAL MODE '
1921 F00032 EQU *
1922 DC AL2(0001)
1923 DC A(0038)
1924 DC CL0038'GO TO PARITY FAILURE MAP 7A78 ENTRY A.'
1925 F00483 EQU *
1926 DC AL2(0001)
1927 DC A(0022)
1928 DC CL0022'SHOULD NEVER GET HERE '
1929 F00009 EQU *
1930 DC AL2(0001)
1931 DC A(0032)
1932 DC CL0032'FILE TESTS OK EXCEPT FOR WRITE. '
1933 PDIT 00
1935+OPTN1 DC X'0000' PROGRAM OPTION CONTROL WORD 1
1936**
1937+OPTN2 DC X'0000' PROGRAM OPTION CONTROL WORD 2
1938**
1939+B48 EQU 16 0 8 PPOBLEM PROGRAM CONTROL BITS
1940+B49 EQU 17 1 4 *
1941+B50 EQU 18 2 2 * THESE BITS ARE USED WITH THE
1942+B51 EQU 19 3 1 * SECOND OPTION WD AND ARE TO
1943+B52 EQU 20 4 8 * BE ASSIGNED BY EACH PROGRAMMER
1944+B53 EQU 21 5 4 *
1945+B54 EQU 22 6 2 *
1946+B55 EQU 23 7 1 *
1947+B56 EQU 24 8 8 *
1948+B57 EQU 25 9 4 *
1949+B58 EQU 26 10 2 *
1950+B59 EQU 27 11 1 *
1951+B60 EQU 28 12 8 *
1952+B61 EQU 29 13 4 *
1953+B62 EQU 30 14 2 *
1954+B63 EQU 31 15 1 *
1955+CHP EQU 30 14 2 CHARACTER SUPPLIED
1956+CHP EQU 31 15 1 COMPARE OPERATION
1958+OPTN3 DC X'0000' PROGRAM OPTION CONTROL WORD 3
1959**
1960** 0 MYSTERY INTERRUPT MI 8 CS STATUS IN PROGRESS CS
1961** 1 ERROR INTERRUPT ER 9 CS AVAILABLE CSA
1962** 2 EXPECTED INTERRUPT XI 10 CS STATUS INTERRUPT ERR CE
1963** 3 INTERRUPT RECEIVED IN 11 ISB BITS ON (1-7) ISBON
1964**
1965** 4 EXPECTED ERR/ATTENT XE 12 TEST UNIT RESULTS VOID NG
1966** 5 HARD ERROR FOUND HE 13 OIO CC ERROR IOCC
1967** 6 WRONG INTR LEVEL $LE 14 NO INTERRUPT NOIN
1968** 7 NO INTR EXPECTED NI 15 INTERRUPT CC ERROR INCC
1969**
1970+MI EQU 32 0 8 MYSTERY INTERRUPT HAPPENED
1971+ER EQU 33 1 4 ERROR RECEIVED ON INTERRUPT
1972+XI EQU 34 2 2 EXPECTED INTERRUPT CONTROL BIT
1973+IN EQU 35 3 1 INTERRUPT RECEIVED CONTROL BIT
1974+XE EQU 36 4 8 EXPECTED ERROR RESPONSE
1975+HE EQU 37 5 4 HARD ERROR, 8 PETRIES
1976+$LE EQU 38 6 2 INTERRUPT ON WRONG LEVEL ERROR
1977+NI EQU 39 7 1 NO INTERRUPT EXPECTED E
1978+CS EQU 40 8 8 CYCLE STATUS IN PROGRESS
1979+CSA EQU 41 9 4 CYCLE STEAL AVAILABLE
1980+CB EQU 42 10 2 CYCLE STEAL STATUS INTERRUPT ERROR
1981+ISBON EQU 43 11 1 ISB BITS ON (1-7)
1982+NG EQU 44 12 8 TEST UNIT RESULTS NO GOOD
1983+IOCC EQU 45 13 4 OIO CC ERROR
1984+NOIN EQU 46 14 2 NO INTERRUPT
1985+INCC EQU 47 15 1 INTERRUPT CC ERROR
1986**
1987** COMMON BUFFER FOR PRINTING DATA
1988**
1990+$TUID DC A(*-*) TEST UNIT IDENTIFICATION
1991+$IOTN DC A(*-*) I/O AND INTR CONDITION CODES
1992+$ISB DC A(*-*) R7 INTR STATUS BYTE & DEV ADRS
1993+$STIO DC A(*-*) ADRS OF LAST I/O + 4 BYTES
1994+DEV1 DC A(*-*) DEVICE DEPENDENT DATA
1995+DEV2 DC A(*-*) *
1996+DEV3 DC A(*-*) *
1997+DEV4 DC A(*-*) *
1998+$CTID EQU DEV1 CS STATUS ERROR ISB & INTR CC
1999+DCBUF EQU * PEAD ID BUFFER FOR IBIS & TERN
2000+DCB1 DC A(*-*) DCB BUFFER FOR LAST DCB USED
2001+DCB2 DC A(*-*) LAST DCB TABLE, CONTROL WORD
2002+DCB3 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
2003+DCB4 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
2004+DCB5 DC A(*-*) LAST DCB TABLE, DEV DEP WORD
2005+DCB6 DC A(*-*) LAST DCB TABLE, CHAIN ADRS
2006+DCB7 DC A(*-*) LAST DCB TABLE, BYTE COUNT
2007+DCB8 DC A(*-*) LAST DCB TABLE, BUFFER ADDRESS
2008**
2009+CSBUF EQU * CYCLE STEAL DATA BUFFER
2010+CSTL1 DC A(*-*) CS STATUS WD 0, RESIDUAL ADDRESS
2011+CSTL2 DC A(*-*) CS STATUS WD 1, RESIDUAL COUNT
2012+CSTL3 DC A(*-*) CS STATUS WD 2, RETRY CNT WD 1
2013+CSTL4 DC A(*-*) CS STATUS WD 3, RETRY CNT WD 2
2014+CSTL5 DC A(*-*) CS STATUS WD 4, ERROR STATUS WD 1
2015+CSTL6 DC A(*-*) CS STATUS WD 5, ERROR STATUS WD 2
2016+CSTL7 DC A(*-*) CS STATUS WD 6, LAST DCB ADDRESS
2017+CSTL8 DC A(*-*) CS STATUS WD 7, PREVIOUS HD/CYL
2018+CSTL9 DC A(*-*) CS STATUS WD 8, CURRENT HD/CYL
2019+CST10 DC A(*-*) CS STATUS WD 9, FLAG/SECTOR
2020+CST11 DC A(*-*) CS STATUS WD 10, HEAD/CYLINDER

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17A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 09A

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976

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002FAE 0000 2021+CST12 DC A(*-*) CS STATUS WD 11, DIAG BYTES 1, 2,
002FB0 0000 2022+CST13 DC A(*-*) CS STATUS WD 12, AND 3 + WRAP BYTE
2023**
2024+$SUBN DC A(*-*) LAST SUBROUTINE ADDRESS USED
002FB4 00000000 2025+$DATA DC 2A(*-*) OPTIONAL DATA
002FB8 0021 2026+$IMTL DC X'0021' INTERRUPT LEVEL REQUESTED
002FBA 0000 2027+$URTN DC A(*-*) TEST UNIT RETURN ADRS TO MDI
002FBC 00 2028+$DVID DC X'00' DEVICE ID
002FBE 19D0 2029+$VVAL DC A(DEVADD) ADRS OF DEVICE ADDRESS
002FC0 0000 2030+ DC A(*-*) IBIS CYLINDER ADDRESS
2031**
2032** THIS TEST UNIT WILL RETURN TO MDI WITHOUT DOING ANY PROGRAM
2033** FUNCTION. THE RESULTS THAT WERE SET UP IN THE RESULTS AREA ARE
2034** STILL VALID BUT A DIFFERENT TEST IS TO BE PERFORMED.
2035**
2036+T7A02 MVMW X'7A02', $TUID SET UP TEST UNIT ID
2037+ BXS (R7) RETURN TO MDI SUPVR
2038+ COPY (OMEQU)
2039**
2041 * *****
2042 * EQUATED NAMES FOR SUPPORTED SVC'S *
2043 *
2044 *****
2045 OUT EQU 0 OUT SVC
2046 OUTIN EQU 1 OUTIN SVC
2047 IDLE EQU 2 IDLE SVC
2048 IDLE5 EQU 3 IDLE SVC - INDEPENDENT OF CPU TYPE
2049 CHNGE EQU 4 CHANGE LEVEL SVC
2050 PGMCK EQU 5 ALLOW RETURN ON PROGRAM CHECK SVC
2051 EXIT EQU 6 EXIT SVC
2052 TERT EQU 7 TERMINATE SVC
2053 RESET EQU 8 RESET DEVICE SVC
2054 RID EQU 9 READ ID SVC
2055 START EQU 10 START CYCLE STEAL SVC
2056 STCSS EQU 11 START CYCLE STEAL STATUS SVC
2057 PREP EQU 12 PREPARE DEVICE SVC
2058 READ0 EQU 13 READ WITH FUNCTION BIT 3 OFF SVC
2059 READ1 EQU 14 READ WITH FUNCTION BIT 3 ON SVC
2060 RSTAT EQU 15 READ STATUS SVC
2061 WRIT0 EQU 16 WRITE WITH FUNCTION BIT 3 OFF SVC
2062 WRIT1 EQU 17 WRITE WITH FUNCTION BIT 3 ON SVC
2063 CTRL EQU 18 CONTROL SVC
2064 RICH EQU 19 RELEASE INTERRUPT CONTROL BLOCK SVC
2065 CICB EQU 20 CONNECT INTERRUPT CONTROL BLOCK SVC
2066 HIO EQU 21 HALT ALL I/O
2067 REOSD EQU 22 REQUEST USE OF DCP DISK SVC
2068 RELSD EQU 23 RELEASE USE OF DCP DISK SVC
2069 HALT EQU 24 HALT SVC
2070 ETOH EQU 25 EBCDIC TO HEX SVC (STRING)
2071 HTOE EQU 26 HEX TO EBCDIC SVC (STRING)
2072 ATOH EQU 27 ASCII TO HEX SVC (STRING)
2073 HTOA EQU 28 HEX TO ASCII SVC (STRING)
2074 ATOE EQU 29 EBCDIC TO ASCII SVC (STRING)
2075 READI EQU 30 ASCII TO EBCDIC SVC (STRING)
2076 READI EQU 31 READ DATA SETS FOR MDI/UTIL
2077 WRIT0 EQU 32 WRITE DATA SETS FOR UTIL
2079 *****
2080 *
2081 * EQUATES USED BY TU'S AS CONSTANTS *
2082 *
2083 *****
2084 PLUS EQU C'+ ' PLUS CHAR
2085 MINUS EQU C'- ' MINUS CHAR
2086 ZERO EQU 0
2087 ONE EQU 1
2088 TWO EQU 2
2089 THREE EQU 3
2090 FOUR EQU 4
2091 FIVE EQU 5
2092 SIX EQU 6
2093 SEVEN EQU 7
2094 EIGHT EQU 8
2095 NINE EQU 9
2096 TEN EQU 10
2097 ELEVN EQU 11
2098 TWELV EQU 12
2099 THRTN EQU 13
2100 FIVTN EQU 14
2101 SIXTN EQU 15
2102 SEVNTN EQU 16
2103 THRY2 EQU 32
2104 SIXT4 EQU 64
2105 ONE28 EQU 128
2106 TWO56 EQU 256
2107 ONEK EQU 1024
2108 TWOK EQU 2048
2109 THREEK EQU 3072
2110 FOURK EQU 4096
2112 M1 EQU -1
2113 M2 EQU -2
2114 M3 EQU -3
2115 M4 EQU -4
2117 *****
2118 *
2119 * THE FOLLOWING ARE EQUATES FOR BIT DISPLACEMENTS FROM THE *
2120 * BEGINNING OF THE BYTE TO EACH BIT IN THE WORD OF SWITCHES. *
2121 *
2122 *****
2123 BS0 EQU 0
2124 BS1 EQU 1
2125 BS2 EQU 2
2126 BS3 EQU 3
2127 BS4 EQU 4
2128 BS5 EQU 5
2129 BS6 EQU 6
2130 BS7 EQU 7
2131 BS8 EQU 8
2132 BS9 EQU 9
2133 BS10 EQU 10
2134 BS11 EQU 11
2135 BS12 EQU 12
2136 BS13 EQU 13
2137 BS14 EQU 14
2138 BS15 EQU 15
2140 COPY T7A20DCB 15NOV77

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
2141 ** (T7A00DCB)
2142 *****4/28/77*****
2143 *
2144 * DCB TABLES AND DC'S
2145 *
2146 *****
2147 *
2148 ***** DIAGNOSTIC DCB *****
2149 *
002FCA 2008 2150 DGDCB DC X'2008' DIAGNOSTIC DCB
002FCE 0000 2151 DC A(*-*) FLAG / PHYSICAL SECTOR#
002FCE 0000 2152 DC A(*-*) HEAD / CYLINDER#*S
002FD0 0000 2153 DC X'0000' NOT USED
002FD2 3054 2154 DC A(RSBA) RSB ADDRESS
002FD4 0000 2155 DC A(*-*) CHAINING ADDRESS
002FD6 0100 2156 DC X'Q100' BYTE COUNT
002FD8 0000 2157 DC A(*-*) DATA ADDRESS
2158 *
2159 ***** RECALIBRATE DCB *****
2160 *
002FDA 0001 2161 CLDCB DC X'0001' RECALIBRATE DCB
002FDC 000000000000000000 2162 DC 7A(*-*)
2163 *
2164 ***** READ SECTOR ID DCB *****
2165 *
002FEA 201C 2166 RSDCB DC X'201C' READ SECTOR ID CNTL WORD
002FEC 0000 2167 DC A(*-*) FLAG / PHYSICAL SECTOR#
002FEE 0000 2168 DC X'0000' HEAD / CYLINDER#*S
002FF0 0000 2169 DC X'0000' NOT USED
002FF2 3054 2170 DC A(RSEA) RSB ADDRESS
002FF4 0000 2171 DC A(*-*) CHAIN ADDRESS
002FF6 0004 2172 DC X'0004' BYTE COUNT FOR READ SECTOR ID
002FF8 2F80 2173 DC A(SCTID) SECTOR ID DATA ADDRESS
2174 *
2175 ***** SEEK DCB *****
2176 *
002FFA 0000 2177 SKDCB DC X'0000' SEEK DCB CONTROL WORD
002FFC 0000 2178 DC X'0000' NOT USED
002FFE 0000 2179 DC A(*-*) HEAD / CYLINDER#*S
003000 0000 2180 DC X'0000' NOT USED
003002 3054 2181 DC A(RSEA) RSB ADDRESS
003004 0000 2182 DC A(*-*) CHAIN ADDRESS
003006 0000 2183 DC X'0000' NOT USED
003008 0000 2184 DC X'0000' NOT USED
2185 *
2186 ***** CYCLE STEAL STATUS DCB *****
2187 *
00300A 2000 2188 CSDCB DC X'2000' CONTROL WORD
00300C 0000 2189 DC F'0' NOT USED
00300E 0000 2190 DC F'0' NOT USED
003010 0000 2191 DC F'0' NOT USED
003012 0000 2192 DC F'0' NOT USED
003014 0000 2193 DC F'0' NOT USED
003016 001A 2194 DC X'001A' 13 WORDS OF STATUS
003018 2F98 2195 DC A(CSBUF) ADDRESS OF CYCLE STEAL STATUS DATA
2196 *
2197 ***** VERIFY DCB *****
2198 *
00301A 0019 2199 VRDCB DC X'0019' CONTROL WORD
00301C 0000 2200 DC A(*-*) FLAG / RECORD#
00301E 0000 2201 DC A(*-*) HEAD / CYLINDER#*S
003020 0000 2202 DC A(*-*) SCAN / REPEAT COUNT
003022 3054 2203 DC A(RSBA) RSB ADDRESS
003024 0000 2204 DC A(*-*) CHAIN ADDRESS
003026 0000 2205 DC A(*-*) BYTE COUNT
003028 0000 2206 DC F'0' NOT USED
2207 *
2208 ***** READ DCB *****
2209 *
00302A 2018 2210 RDCB DC X'2018' READ DCB CONTROL WORD
00302C 0000 2211 DC A(*-*) FLAG / RECORD#
00302E 0000 2212 DC A(*-*) HEAD / CYLINDER#*S
003030 0000 2213 DC A(*-*) SCAN / REPEAT COUNT
003032 3054 2214 DC A(RSBA) RSB ADDRESS
003034 0000 2215 DC A(*-*) CHAIN ADDRESS
003036 0100 2216 DC X'Q100' BYTE COUNT
003038 0000 2217 DC A(*-*) READ DATA ADDRESS
2218 *
2219 * CONSTANTS AND DEFINED STORAGE LOCATIONS
2220 ZER00 DC X'0000' CONSTANT ZERO
2221 ONE1 DC X'0001' CONSTANT ONE
2222 RAY DC A(*-*) WRITE PARAMETER POINTER
2223 WDATA DC X'EB6D' WRITE DATA
2224 *
2225 LGSEC DC X'0000' LOGICAL SECTOR #
2226 PHISC DC X'0000' CONVERTED PHYSICAL SEC #
2227 WRSID DC X'0000' FLAG,SECTOR (WRT SECTOR ID DATA)
2228 *
2229 WSIDT DC X'FF34' HEAD,CYLINDER
2230 DC X'5678' WRITE SECTOR ID TEST DATA
2231 SCTST DC X'0000' READ SECTOR ID TEST DATA BUFFER
2232 DC X'0000' *
2233 RSBA DC 6A(*-*) PESINUAL STATUS BLOCK
2234 CTR02 DC X'0000' COUNTER
2235 CTR03 DC X'0000' COUNTER
2236 ID00 DC X'0000' ID ADDRESS TO BE SET BY USER
2237 LPCNT DC A(*-*) PATTERN COUNTER
2238 PDATA DC X'1010' DATA PATTERNS
2239 *
2240 AAAA DC X'5555' *
2241 DC X'FFFF' *
2242 *
2243 *****4/06/77*****
2244 *
2245 * SUBROUTINE
2246 *
2247 * PURPOSE
2248 *
2249 * COMPARE READ SECTOR ID DATA TO WRITE SECTOR ID DATA
2250 *
2251 * CALLING SEQUENCE
2252 *
2253 * BAL CMPRW,R6 (NORMAL)
2254 *

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2255 * RETURN
2256 *
2257 *
2258 * BXS (R6,2) - NORMAL
2259 *
2260 *****
2261 *
003070 4724 0004 2262 CMPRW MVWI 4,R7 COMPARE BYTE COUNT
003074 4324 2F80 2263 MVA SCTID,R3 ADDR OF RD SEC ID DATA
003078 4524 3048 2264 MVA WRSID,R5 ADDR OF WR SEC ID DATA
00307C 2BA6 2265 CFNEN (R3),(R5) COMPARE ID DATA
00307E 68C0 0002 2266 BE (R6,2) BCH IF WRITE ID DATA OK
003082 68D2 0000 2267 B (R6)* COMPARE ERROR
2268 *****
2269 *
2270 * EXECUTE INPUT & OUTPUT COMMANDS
2271 * TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
2272 * EACH OF THESE ENTRIES SET R7 WITH THE ADRS OF ITS PARAMETER
2273 * LIST AND ANY SPECIAL SWITCHES BEFORE BRANCHING TO THE
2274 * SUPVR CALL.
2275 *
2276 * THIS SUBROUTINE WILL CHECK FOR THE FOLLOWING:
2277 *
2278 * 1. LOST INTERRUPTS BY TIMING OUT A COUNTING LOOP
2279 * 2. ERROR INTERRUPTS RECEIVED FROM SUPVR
2280 *
2281 * THIS ROUTINE HAS THE FOLLOWING ENTRIES:
2282 *
2283 * 1 BAL \$RKEW,R6 READ SECTOR ID SKEWED
2284 *
2285 * 2 BAL \$WKEW,R6 WRITE SECTOR ID SKEWED
2286 *
2287 * 3 BAL \$WSEC,R6 WRITE SECTOR ID
2288 *
2289 * 4 BAL \$DIAG,R6 DIAGNOSTIC
2290 *
2291 * 5 BAL \$XIOCS,R6 CYCLE STEAL STATUS
2292 *
2293 * 6 BAL \$SSEEK,R6 SEEK
2294 *
2295 * 7 BAL \$RECL,R6 RECALIBRATE
2296 *
2297 * 8 BAL \$RDID,R6 READ SECTOR ID
2298 *
2299 * 9 BAL \$RD,R6 READ
2300 *
2301 * 10 BAL \$RDVY,R6 READ VERIFY
2302 *
2303 * 11 BAL \$WRT,R6 WRITE
2304 *
2305 * 12 BAL \$RDIM,R6 READ MULTI SECTOR IDS
2306 *
2307 *****
2308 *
003086 4020 3242 2FPA 2309 \$SEEK MVA SKDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
00308C 5051 2310 J XIO
2311 *
00308E 4020 3242 2FDA 2312 \$RECL MVA CLDCB,IODCB SET UP BLOCK FOR SVC CALL
003094 504D 2313 J XIO
2314 *
003096 4020 3242 2FEA 2315 \$RDID MVA RSDCB,IODCB SET UP BLOCK FOR SVC CALL
00309C 0BBB 2316 MVB X'BB',R3 SET BUFFER TO B'S
00309E 4524 2F80 2317 MVA SCTID,R5 SETUP READ SECTOR ID BUFFER ADRS
0030A2 4724 0004 2318 MWHI 4,R7 SETUP BUFFER LENGTH
0030A8 2BAC 2319 R3,R5 INIT READ SECTOR ID BUFFER
0030AE 4020 2FF8 2F80 2320 MVA SCTID,RSDCB+14 DATA ADDR
0030A8 5040 2321 J XIO
2322 *
0030B0 0BFF 2323 \$RD MVB X'FF',R3 SETRD BUFFER TO ALL F'S
0030B2 6008 3038 2324 MVA RDDCB+14,R5 SET UP READ BUFFER ADRS
0030B6 6F08 3036 2325 MVA RDDCB+12,R7 SET UP BUFFER LENGTH
0030BA 2BAC 2326 MVA R3,R5 CLEAR READ BUFFER
0030BC 4020 3242 302A 2327 \$RDS MVA RDDCB,IODCB SET UP BLOCK FOR SVC CALL
0030C2 5036 2328 J XIO
2329 *
0030C4 4020 3242 301A 2330 \$RDVY MVA VRDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
0030CA 5032 2331 J XIO
2332 *
0030CC 4020 3242 2PCA 2333 \$DIAG MVA DGDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
0030D2 502E 2334 J XIO
2335 *
0030D4 6E0D 2F7E 2337 \$WRT0 MVA R6,LSTIO SAVE IAR FOR RETRY IF REQUESTED
0030D8 0BFF 2338 MVB 255,F3 CLEAR CYCLE STATUS BUFFER
0030DA 4524 2F98 2339 MVA CSBUF,R5 * TO ALL ONES *
0030DE 0F16 2340 MVB 22,R7 *
0030E0 2BAC 2341 MVA R3,R5 *
0030E2 4524 2F88 2342 MVA DCBUF,R5 CLEAR DCB BUFFER TO ALL ONES
0030E6 0F10 2343 MVB 16,R7 *
0030E8 2BAC 2344 MVA R3,R5 *
0030EA 4020 2F7A 0708 2345 MVA X'0708', \$I0IN OVERLAY OLD CONDITION CODES
0030F0 CB25 2F7C 2346 MVA \$ISB,R3 ZERO OUT OLD ISB VALUE
0030F4 4CA1 2347 TBTR (R4,IN) CLEAR INTERRUPT RECEIVED CNTL BIT
0030F6 4C62 2348 TBTR (R4,ER) RESET ANY ERROR BEFORE I/O COMMAND
0030F8 4724 323E 2349 TBTS (R4,XI) SET EXPECTED INTR CONTROL BIT
0030FE C020 3245 2350 MVA IOBLK,R7 SET UP CONTROL BLK FOR SUPR
003102 402D 3244 00F0 2351 MVB IOMOD+1,R0 GET IDCBC FUNC/MODIFIER
003108 3022 2352 RBTWI X'00F0',IOMOD REMOVE FUNCTION FROM 'IOMOD'
00310A F005 2353 SRL 4,R0 RIGHT JUSTIFY FUNCTION BITS IN R0
00310C 1003 2354 CBI 5,R0 IDCBC FUNCTION = 5?
00310E 6010 2355 MVA \$WRT1 YES 'SVC WRIT1'
003110 6802 318A 2356 SVC WRIT0 ISSUE WRITE DPC '4X' OP
003114 6011 2357 B XIO8-4 GO WAIT FOR THE INTERRUPT
003116 6802 318A 2358 \$WRT1 SVC WRIT1 ISSUE WRITE DPC '5X' OP
2359 B XIO8-4 GO WAIT FOR THE INTERRUPT
2360 *
00311A 4020 3242 302A 2361 \$DGRD MVA RDDCB,IODCB SET UP CONTROL BLK FOR SVC CALL
003120 6F08 3036 2362 MVA RDDCB+12,R7 GET NO. OF BYTES TO CLEAR
003124 6D08 3038 2363 MVA RDDCB+14,R5 ADDR OF READ BUFFER
003128 0BFF 2364 MVB X'FF',R3 CLEAR TO F'S
00312A 2BAC 2365 MVA R3,R5 *
00312C 6802 3136 2366 B XIO8-4 *
2367 B XIO8-4 *
2368 COPY T7AXEQ
2369 PRINT OFF
2370 T7AXEQ

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2934*****29JUL76**
2935**
2936** SUB-ROUTINE
2937**
2938** EXECUTE INPUT AND OUTPUT COMMANDS
2939**
2940** PURPOSE
2941**
2942** TO EXECUTE ALL I/O COMMANDS FROM A COMMON PLACE.
2943** THIS SUBROUTINE WILL DO THE FOLLOWING FUNCTIONS:
2944**
2945** 1. SAVE THE ADDRESS THAT POINTS TO THE INSTRUCTION THAT STARTED
2946** THE I/O COMMAND.
2947** 2. SAVES THE DCB BLOCK USED UNLESS IT IS A START CYCLE STATUS
2948** ISSUED BY THIS SUBROUTINE.
2949** 3. CLEAR OUT THE CYCLE STEAL STATUS STORAGE UNLESS THE
2950** START CYCLE STATUS WAS ISSUED BY THIS SUBROUTINE.
2951** 4. RESETS THE INTERRUPT INDICATOR AND CHECKS FOR ANY INTERRUPT
2952** SINCE THE LAST EXPECTED INTERRUPT. IF AN INTERRUPT IS FOUND,
2953** MYSTERY INTERRUPT (MI) CONTROL BIT IS SET.
2954** 5. MOVES THE ADDRESS OF THE I/O CONTROL BLOCK IN R7, SET THE
2955** EXPECTED INTERRUPT CONTROL BIT AND ISSUE THE 'SVC START'.
2956** 6. WHEN THE SUPVR RETURNS AFTER ISSUING THE I/O COMMAND, TIMING
2957** STARTS TO DETERMINE A LOST INTERRUPT.
2958** 7. EXCEPT THE INTERRUPT AND GATHER INFORMATION TO DETERMINE IF IT
2959** WAS AN ERROR OR OKAY AND EXIT OFF THE INTERRUPT LEVEL.
2960** 8. CHECK IF THERE WAS A WRONG INTERRUPT LEVEL.
2961** 9. CHECK IF AN ERROR WAS EXPECTED AND IF THERE WAS RETURN.
2962** 10. CHECK IF THERE WAS AN ERROR CONDITION, IF NOT RETURN.
2963** 11. CHECK TO SEE IF THE EXERCISER IS TO BE TERMINATED.
2964** 12. CHECK IF A CYCLE STEAL OPERATION WAS IN PROGRESS THAT WAS
2965** ISSUED BY THIS SUBROUTINE.
2966** 13. CHECK THE ISB BITS THAT ARE ON. IF BIT 0 IS ON, ISSUE A
2967** CYCLE STEAL STATUS COMMAND. CHECK FOR ANY OTHER BIT BEING ON,
2968** COUNT IT AND SET UP THE PROPER ERROR MESSAGE TO BE PRINTED.
2969**
2970** CALLING SEQUENCE
2971**
2972** THIS ROUTINE HAS THE FOLLOWING ENTRIES:
2973**
2974** --> BAL XIO OR XEQ ANY CYCLE STEAL COMMAND, MOD=0
2975** --> BAL XIO1 MOD PARM PRELOADED IN 'IOMOD'
2976** --> BAL XIOCS,R6 OR XEQ START CYCLE STEAL STATUS, MOD=F
2977** --> BAL XIOCS-4,R6 AUTO CS STATUS (FOLLOWING OTHER XIO
AND DOES NOT POST INTERRUPT STATUS)
2978**
2979** RETURN CONTROL
2980**
2981**
2982** BXS (R6,2) RETURN TO USER NO ERROR
2983** OR B (R6)* RETURN AND RETRY ON ERROR
2984** *****
2986** XIO MWZ IOMOD,R3 SET MOF OF 0 FOR CYCLE STEAL OP
2987** J XIO1 CS I/O'S ARE NOT RETRIED
2988**
2989** XIODG MVWI X'000D',IOMOD SET MODIFIER FOR DIAGNOSTIC OPS
2990** J XIO1 GO TO CS OPS
2991**
2992** TBTR (R4,CE) RESET CS STATUS INTER ERROR INDICAT.
2993** TBTS (R4,CS) SET 'CYCLE STEAL STATUS' IN PROGRESS
2994** XIOCS MVA CSDCB,IODCB SET UP CONTROL BLOCK FOR SVC CALL
2995** MVWI X'000F',IOMOD SET CYCLE STEAL MODIFIER
2996** TBTR (R4,CS) IS 'CS' IN PROGRESS, ERROR CONDITION
2997** JON XIO2 * YES, BYPASS SAVING I/O ADRS
2998** XIO1 MVW R6,LSTIO SAVE IAR FOR RETRY IF REQUESTED
2999** MVA DCBUP,R3 SET UP TO ADRS TO MOVE DCB TABLE
3000** MVW IODCB,R5 * AND THE FROM ADRS, ALONG WITH
3001** MVBI 26,R7 * THE NUMBER OF MOVES
3002** MVFN (R5),(R3) MOVE 1 STATUS WORD AND ADJUST
3003** MVBI 255,R3 CLEAR CYCLE STATUS BUFFER
3004** MVA CSBUF,R5 * TO ALL ONES *
3005** MVBI 26,R7 *
3006** FEN R3,(R5)
3007** MVWI X'0708',SIOIN OVERLAY OLD CONDITION CODES
3008** MVWZ \$ISB,R3 ZERO OUT OLD ISB VALUE
3009**
3010** TBTR (R4,ER) RESET ANY ERROR BEFORE I/O COMMAND
3011** XIO2 TBTR (R4,IN) CLEAR INTERRUPT RECEIVED CNTL BIT
3012** MVA IOBLK,R7 SET UP CONTROL BLOCK FOR SUPVR
3013** TBTR (R4,\$LE) RESET LEVEL ERROR INDICATOR
3014** TBTS (R4,XI) SET EXPECTED INTR CONTROL BIT
3015** SVC START CALL SUPVR FOR I/O COMMAND
3016**
3017** TBTR (R4,NI) IS AN INTR EXPECTED
3018** BN (R6,2) * NO, RETURN TO USER
3019**
3020** THE INTR SHOULD OCCUR WHILE SPINNING IN THE NEXT SECTION
3021**
3022** MVWI 0,R5 SET UP WORK REG FOR 'LOST INTR'
3023** XIO8 TBTR (R4,IN) HAS INTERRUPT BEEN RECEIVED
3024** XIOCK * YES, CHECK IF ALL WAS SATISFACTORY
3025** SVC IDLE ALLOW ANOTHER PROGRAM A CHANCE TO RUN
3026** SUPVR WILL RETURN HERE
3027** SVC IDLE ALLOW ANOTHER PPROGRAM A CHANCE TO RUN
3028** SUPVR WILL RETURN HERE
3029** ANI 1,R5 ADVANCE TIME OUT COUNT
3030** JNZ XIO8 BCH IF TIME OUT NOT REACHED
3031** TBTS (R4,ER) SET ON ERROR CONTROL BIT
3032** B (R6)* ERR 'NO INTERRUPT'
3033** *****03FEB76**
3035**
3036** SUBROUTINE
3037**
3038** I/O EXECUTE ERROR HANDLING ROUTINE
3039**
3040** PURPOSE
3041**
3042** THIS ROUTINE WILL COLLECT INFORMATION TO HELP DETERMINE THE
3043** PROBLEM THAT WAS FOUND WHEN THE I/O COMMAND WAS ISSUED BY THE
3044** SUPERVISOR AND IT WAS NOT ACCEPTED.
3045**
3046** CALLING SEQUENCE
3047**
3048** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O COMMAND
3049**
3050**

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3050** RETURN CONTROL
3051**
3052** B (R6)* RETURN TO USERS ERROR HANDLER
3053**
3054** *****
3055**
3056** CC 0= DEVICE NOT ATTACHED
3057** FOR 1= DEVICE BUSY
3058** I/O 2= DEVICE BUSY AFTER RESET
3059** 3= COMMAND REJECT
3060** 4= INTERVENTION REQUIRED
3061** 5= INTERFACE DATA CHECK
3062** 6= CONTROLLER BUSY
3063** 7= I/O COMMAND EXPECTED
3064**
3065** XIOER CPLSR R3 COPY STATUS ANY LEVEL INTO R3
3066** SRL 13,R3 POSITION CC CODE TO BITS 13-15
3067** MVB R3,SIOIN * PUT IN LOG OUT AREA
3068** B (R6)* RETURN TO USER ERROR HANDLER
3069** *****14A PP76**
3070**
3071** SUB-ROUTINE
3072**
3073** ERROR INTERRUPT RUNS ON INTERRUPT LEVEL '\$INTL'
3074**
3075** PURPOSE
3076**
3077** THIS ROUTINE WILL BE ENTERED WHEN THE SUPVR DETECTS AN ERROR
3078** OR THE INTERRUPTING CONDITION CODE DOES NOT AGREE WITH THE
3079** EXPECTED CODE.
3080**
3081** CALLING SEQUENCE
3082**
3083** SUPVR WILL ENTER WHEN AN ERROR OCCURS ON AN I/O INTERRUPT
3084**
3085** RETURN CONTROL
3086**
3087** SVC EXIT RETURN TO USER VIA SUPVR
3088**
3089** *****
3090**
3091** CC 0= CONTROLLER END ISB 0= ADD STATUS
3092** FOR 1= PROGRAM CONTROL INTERRUPT BITS 1= COMD REJECT
3093** INTR 2= EXCEPTION INTERRUPT FOR 2= INCOR LENGTH
3094** 3= DEVICE END INTERRUPT INTR 3= DCB SPEC CK
3095** 4= ATTENTION INTERRUPT 4= STG DATA CK
3096** 5= ATTENTION / PROGRAM CNTL INTR 5= INV STG ADRS
3097** 6= ATTENTION / EXCEPTION INTR 6= PROTRCT CK
3098** 7= ATTENTION / DEVICE END INTR 7= I-FACE DATA
3099** *****
3100**
3101** INTER CPLSR R3 COPY STATUS ANY LEVEL INTO R3
3102** SRL 13,R3 POSITION INDICATORS IN R3
3103** MVA OPTN1,R4 SET UP BASE ADRS
3104** TBTR (R4,C5) IS 'CS' IN PROGRESS
3105** JOFF INTES * NO
3106** TBTS (R4,CE) TURN ON CYCLE STEAL INTER ERROR
3107** MVW R7,DEV4 SAVE CS ERR ISB VALUE, BITS 0-7
3108** MVB R3,DEV4+1 * AND THE COND CODE
3109** J INTR1
3110** INTES TBTR (R4,XE) TEST EXPECTED ATTEN / ERROR IND
3111** JOFF INTR BCH IF NOT EXPECTED
3112** CBI 4,R3 IS THIS AN 'ATTENTION' INTR
3113** JE INTR1 * YES, BCH TO END INTR SEQUENCE
3114** INTET TBTS (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
3115** J INTR1
3116** THE ERROR INTERRUPT USES THE SAME
3117** ENDING SEQUENCE AS THE NORMAL INTR
3118** *****14APR76**
3119**
3120** SOUBROUTINE
3121**
3122** OKAY INTERRUPT RUNS ON INTERRUPT LEVEL '\$INTL'
3123**
3124** PURPOSE
3125**
3126** TO CHECK THE INTERRUPT AND CONTINUE THE TEST
3127**
3128** CALLING SEQUENCE
3129**
3130** SUPERVISOR WILL ENTER HERE IF INTR CC IS AS REQUESTED
3131** THE ERROR INTERRUPT HANDLER WILL BRANCH TO THIS ROUTINE
3132** AFTER THE SPECIAL PART HAS BEEN COMPLETED AND THE
3133** COMMON SECTION IS HANDLED HERE.
3134**
3135** RETURN CONTROL
3136**
3137** SVC EXIT RETURN TO USER VIA SUPVR
3138**
3139** *****
3140**
3141** INTOK CPLSR R3 COPY STATUS ANY LEVEL INTO R3
3142** SRL 13,R3 POSITION INDICATORS IN R3
3143** MVA OPTN1,R4 SET UP BASE ADRS
3144** INTR1 TBTS (R4,IN) SET INTERRUPT RECEIVED
3145** TBTR (R4,C5) IS 'CS' IN PROGRESS' ON
3146** JON INTR2 * YES, BCH AROUND UPDATE
3147** MVB R3,SIOIN+1 SAVE INTERRUPTING CC CODE
3148** MVW R7,\$ISB SAVE INTR STATUS AND DEV ADRS
3149** EQU *
3150** CPCI R5 CURRENT LEVEL COPIED BY DCP
3151** SLL 4,R5 POSITION INTR LEVEL AND PUT
3152** ABI 1,R5 * IN 'I' BIT
3153** CW \$INTL,R5 IS THIS THE CORRECT INTR LEVEL
3154** JE INTR3 * YES, GO EXIT THIS LEVEL
3155** TBTS (R4,\$LE) SET INTR LEVEL ERROR CONTROL BIT
3156** TBTS (R4,ER) SET ERROR ON I/O COMMAND CNTL BIT
3157** INTR3 TBTR (R4,XI) WAS INTERRUPT EXPECTED
3158** JON INTRX * YES, EXIT OFF THIS INTR LEVEL
3159** TBTR (R4,MI) * NO, SET MYSTERY INTR CONTROL BIT
3160** 4,R3 YES INTERVENTION INTERRUPT?
3161** JE INTRX
3162** TBTS (R4,NG) ERROR, UNEXPECTED INTERRUPT
3163** INTRX SVC EXIT THIS LEVEL VIA SUPVR TO PGM
3164** *****03FEB76**
3165**
3166**

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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
3167** THIS IS THE CONTINUATION OF EXECUTE I/O AFTER THE INTERRUPT
3168** HAS BEEN SERVICED. THE EXERCISER FINDS AN INTERRUPT HAS BEEN
3169** RECEIVED AND BRANCHES HERE TO CHECK FOR ANY ERROR CONDITIONS.
3170**
3171**
003204 4CA4 0002 172+XIOCK TBTR (R4,XE) WAS AN ERROR EXPECTED
003206 6AC0 0002 173+ BN (R6,2) * YES, EXIT THIS ROUTINE
00320A 4CA8 174+ TBTR (R4,CS) WAS AUTO CS IN PROGRESS
00320C 1006 175+ XIOCV XIOCV * NO, CONTINUE CHECKING
00320E 4C2A 176+ TBT (R4,CE) IS CS IN AN ERR CONDITION
003210 1002 177+ JOFF XIOCO * NO, BCH
003212 4C69 0000 178+ B (R6)* CS ERROR
003214 4C69 0000 179+XIOCO TBT (R4,CSA) TURN ON CS STATS AVAIL FLAG
003218 5601 180+ BXS (R4,2) GO TO USER
00321A 4C21 181+XIOCV TBT (R4,ER) WAS ERROR INTR CONTROL BIT ON
00321C 100D 182+ JOFF XIOCX * NO, EXIT THIS ROUTINE
183**
00321E C520 2F7B 184+ MVB $IOIN+1,R5 GET LAST INTR CC CODE
003222 F502 185+ CBI 2,R5 IS THIS CC=2
003224 1003 186+ JE XIOCO YES
003226 F506 187+ CBI 6,R5 IS THIS CC=6
003228 68D1 0000 188+ BNE (R6)* * NO, BCH TO ERROR HANDLER
00322C C520 2F7C 189+XIOCV MVB $ISB,R5 GET LAST ISB DATA BYTE AND IF CS
003230 6A00 313E 190+ BN XIOCS-4 * AVAILABLE, GO AND GET IT
003234 68D2 0000 191+ B (R6)* ERROR
003238 CB25 2F76 192+XIOCV MVMZ OPTN3,R3 CLEAR OUT OPTION 3 CNTL BITS
00323C 5601 193+ BXS (R6,2) RETURN TO USER VIA REG 6
194**
195** I/O PARAMETER LIST
196**
00323E 19D0 197+IOBLK DC A(DEVADD) ADRS OF DEVICE ADRS
003240 31A2 198+ DC A(XIOER) ERROR ROUTINE ADRS
003242 0000 199+IODCB DC A(*-*) DCB ADRS OR LEVEL & INTR
003244 0000 200+IOMOD DC A(*-*) MODIFIER
003246 0000 201+ DC A(*-*) ADRS OF LAST SVC CALL
003248 0000 202+IORSR DC A(*-*) SECOND WORD OF LAST IDCB
203**
204** INTERRUPT CONTROL BLOCK FOR I/O COMMANDS
205**
00324A 19D0 206+INTBL DC A(DEVADD) ADRS OF DEVICE ADRS
00324C 31D2 207+ DC A(INTOK) INTERRUPT OK RETURN ADRS
00324E 31AE 208+ DC A(INTER) INTERRUPT ERROR ADRS
003250 0003 209+INTCC DC X'0003' INTERRUPT CODE EXPECTED
210**
211+*****11MAY76**
212**
213** SUBROUTINE
214**
215** CONNECT INTERRUPT CONTROL BLOCK & PREPARE DEVICE
216**
217** PURPOSE
218**
219** TO CONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
220** PREPARE ON THE DESIRED INTERRUPT LEVEL AND TO ALLOW THE DEVICE
221** TO INTERRUPT.
222**
223** CALLING SEQUENCE
224**
225** THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
226**
227** --> BAL $CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BLK
228** --> BAL $CONC,R6 PREPARE DEVICE ONLY, ALREADY CCNECT
229**
230** RETURN CONTROL
231**
232** BXS (R6,2) RETURN TO USER VIA REG 6 IF OKAY
233** OR B (R6)* IF THE DEVICE COULD NOT BE CONNECTED
234**
235+*****06APR76**
236+$CONC MVI 6,R7 NUMBER OF BYTE TO CLEAR
237+ MVI 0,R3 * AND THE DATA TO USE
238+ MVA DEVI,R5 * ALONG WITH THE ADRS TO USE
239+ PPN R3,(R5)
240+ MVMZ OPTN3,R3 CLEAR OLD CONTROLS FOR NEW ROUTINE
241+ MVA INTBL,R7 SET R7 TO CONTROL BLOCK AND
242+ SVC CICB * CONNECT IT TO THIS DEVICE
243+ BN (R6)* ERROR RETURN TO USER
244**
00326A 8828 2FB8 3242 245+$CONC MVA $INTL,IODCB PUT IN LEVEL & INTR PARAMETER
003270 4724 323E 246+ MVA IOBLK,R7 SET R7 TO CONTROL BLOCK TO PREPARE
003274 4020 2F7A 0708 247+ MVI X'070B',SIOIN INITIALIZE CONDITION CODE STORAGE
00327A CB25 2F7C 248+ MVMZ $ISB,R3 * AND CLEAR OLD ISB VALUE
00327E 6E0D 2F7E 249+ MVA R6,LSTIO SET UP ADDRESS THAT STARTED LAST I/O
003282 600C 249+ SVC PREP * AND CALL ON SUPVR
003284 5601 251+ BXS (R6,2) RETURN TO USER
252**
253+*****06APR76**
254**
255** SUBROUTINE
256**
257** DISCONNECT THE INTERRUPT CONTROL BLOCK AND LOG ERRORS
258**
259** PURPOSE
260**
261** DISCONNECT THE INTERRUPT CONTROL BLOCK TO THIS DEVICE AND
262** SET THE 'NO GOOD' CONTROL BIT, THEN LOG THE DATA THAT HAS
263** BEEN FOUND TO HELP THE OPERATOR DEFINE THE ERROR CONDITION.
264**
265** CALLING SEQUENCE
266**
267** THIS SUBROUTINE HAS THE FOLLOWING ENTRIES:
268**
269** --> B $ERR$ SET 'NG' BIT AND CONVERT DATA TO LOG
270** --> B $CONX RETURN TO MDI SUPERVISOR TO TEST STS
271**
272** RETURN CONTROL
273**
274** OR B TURTN* RETURN TO MDI
275** (R6)* IF THE DEVICE COULD NOT BE CONNECTED
276**
277+*****
278+$ERR$ MVI X'8000',TUSTATUS SET ON 'NO GOOD' STATUS BIT
00328C 4724 3456 279+ MVA HEBLK,R7 GET ADRS OF CONTROL BLOCK
003290 601A 280+ SVC HTOE CONVERT HEX TO EBC VIS DCP
003292 4020 188E 4040 281+ MVI X'4040',TUWORK+116
003298 4020 1890 4040 282+ MVI X'4040',TUWORK+118

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LOCTR OBJECT TEXT      STMT SOURCE STATEMENT      COPYRIGHT IBM CORP 1976
3283+ 4020 1892 4040 3283+ MVI X'4040',TUWORK+120
0032A4 00B4 3284+ MVI 4,R5
0032A6 4324 181A 3285+ MVA TUWORK,R3
0032AA 6B0D 344E 3286+ MVA R3,BUFPT SET UP BUFFER STORAGE
0032AE 4124 332A 3287+ MVA LINE1,R1
0032B2 0F04 3288+ MVI 4,R7
0032B4 0E08 3289+ MVI 8,R6
0032B6 2B24 3290+MVBUF MVMFN (R3),(R1)
0032B8 0F04 3291+ MVI 4,R7
0032BA 0A40 3292+ MVI X'40',R2
0032BC C258 3293+ MVB R2,(R1)+
0032BE BEFB 3294+ JCT MVBUFF,R6
0032C0 0808 3295+ MVI 4,R6
0032C2 7921 3296+ MVI 4,R1
0032C4 BDF7 3297+ JCT MVBUFF,R5
0032C8 4020 1802 F1F0 3298+ MVI PIDMSG10,PID+2
0032CE 4020 19B8 3454 3299+ MVA FAKETU,@DCADD1
0032D0 4020 19BA 3450 3300+ MVA DC2PT,@DCADD2
0032DA 402C 19C4 0080 3301+ OWI BIT0080,SUPSTAT
0032E0 4324 2F78 3302+ MVA $TUID,R3
0032E4 6F13 18BA 3303+ BAL TUMSGWTR*,R7 SET UP BUFFER STORAGE
3304** GO TO MESSAGE WRITER
3305+$CONX EQU *
3306+ MVB * DEVADD,R7 GET DEVICE ADDRESS FROM MDI
3307+ SVC RIBC RELEASE INTERRUPT CONTROL BLOCK
3308+ B TURTN* RETURN TO MDI SUPERVISOR
3309**
0032F2 0009 3310+BEGIN DC A(0009) NUMBER OF LINES TO PRINT
0032F4 0008 3311+ DC A(0008) LINE LENGTH = 8 CHAR
0032F6 5C5C40C1C2D6D9E3 3312+ DC C'** ABORT'
0032FE 0028 3313+ DC A(0040) LINE LENGTH = 40 CHAR
003300 E3E4C9C440C9D6C9D 3314+ DC C'TUID IOIN ISB INST SECT ID DATA CSCC
003302 0028 3315+ DC A(0040) LINE LENGTH = 40 CHAR
003304 4040404040404040 3316+LINE1 DC C' LINE LENGTH = 40 CHAR
003306 0028 3317+ DC A(0040) LINE LENGTH = 40 CHAR
003308 C3D5E3D340C4C3C2F 3318+ DC C'CNTRL DCB1 DCB2 DCB3 DCB4 CHAD BYCT ADRS
00330A 0028 3319+ DC A(0040) LINE LENGTH = 40 CHAR
00330C 4040404040404040 3320+LINE2 DC C' LINE LENGTH = 40 CHAR
00330E 0028 3321+ DC A(0040) LINE LENGTH = 40 CHAR
003310 C3E260F040C3E260F 3322+ DC C'CS-0 CS-1 CS-2 CS-3 CS-4 CS-5 CS-6 CS-7
003312 0028 3323+ DC A(0040) LINE LENGTH = 40 CHAR
003314 4040404040404040 3324+LINE3 DC C' LINE LENGTH = 40 CHAR
003316 0028 3325+ DC A(0040) LINE LENGTH = 40 CHAR
003318 C3E260F840C3E260F 3326+ DC C'CS-8 CS-9 CS-A CS-B LINE LENGTH = 40 CHAR
00331A 0028 3327+ DC A(0040) CS-C LINE LENGTH = 40 CHAR
00331C 4040404040404040 3328+LINE4 DC C'
3329**
00344E 0000 3330+BUFPT DC A(*-*)
003450 32F2 3331+DC2PT DC A(BEGIN)
003452 0101 3332+FIXTU DC X'0101'
003454 0101 3333+FAKETU DC X'0101'
00F1F0 3334+PIDMSG10 EQU X'F1F0'
000080 3335+BIT0080 EQU X'0080'
3336**
3337** DATA CONTROL BLOCK FOR CONVERTING HEX TO EBCDIC
3338**
003456 003A 3339+HEBLK DC A(58) NUMBER OF BYTES TO CONVERT
003458 2F78 3340+ DC A($TUID) FROM ADRS
00345A 181A 3341+ DC A(TUWORK) AND THE TO ADRS
3342** COPY T7A20GMP 09JAN78
3343+*****
3344** SUBROUTINE
3345**
3346** READ TRACK ID
3347**
3348** PURPOSE
3349**
3350** READ AND STORE TRACK ID (HEAD/CYLINDER) INTO TU RESULTS BUFFER.
3351**
3352** CALLING SEQUENCE
3353**
3354** BAL VSEK,R6 READ AND STORE TRACK ID
3355**
3356** RETURN CONTROL
3357**
3358** B SEEKK+2 RETURN TO CALLER
3359**
3360+*****
3361+VSEK MVA R6,SEEK+2 SAVE RETURN ADDRESS
3362+ MVA SKDCB+4,RSDCB+4 LOAD HEAD AND CYLINDER DATA
3363+ MVI 4,RSDCB+12 SET BYTE CNT TO READ ONE ID
3364+ MVMZ RSDCB+2,R0 SET PHYSICAL SECTOR TO ZERO
3365+ VSEC BAL $RSDID,R6 READ SECTOR ID
3366+ DC A($ERR$) ABORT TEST IF ERROR
3367+ TWI X'F700',SCTID CHECK IF GOOD SECTOR (FLAG=00 OR 04)
3368+ JZ SEEKK SECTOR GOOD - GO CHECK HD/CYL
3369+ CWI 32,RSDCB+2 HAVE ALL SECTORS BEEN TESTED?
3370+ BE SEEKK YES - ABORT TEST
3371+ AWI 1,RSDCB+2 NO - SET TO NEXT PHYSICAL SECTOR
3372+ J VSEC GO READ ID AND VERIFY SECTOR
3373+ SEEKK B *- RETURN TO CALLER
3374+*****
3375**
3376**
3377** PURPOSE
3378**
3379** TO CALCULATE THE ELAPSED TIME WHEN CHECKING THE SPEED OF THE
3380** DISK OR THE TIME OF A SEEK OP. FORMULA USED IS AS FOLLOWS:
3381**
3382** T(USEC) = (10509*DSNS1 + 41*DSNS2)*.55
3383**
3384** CALLING SEQUENCE
3385**
3386** BAL TMDIG,R6 CALUCULATE ELAPSED TIME
3387**
3388** RETURN CONTROL
3389**
3390** BXS (R6) RETURN TO CALLER
3391**
3392+*****
3393+TMDIG MVI 10509,R1 MULTIPLY DIAG SENSE BYTE 1 X 10509
3394+ SW R0,R0 * CLEAR REG 0
3395+ MVMZ SPEED,R5 * CLEAR BUFFER
3396+ MVB DSNS1,SPEED+1 * MOVE DIAG SENSE BYTE TO WORD BOUND
3397+ MD SPEED,R0 * PERFORM MULTIPLICATION

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17A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 13

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976

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0034A8 4324 0029 3398 MVWI 41,R3 MULTIPLY DIAG SENSE BYTE 2 X 41
0034A9 724A 3399 SW R2,R2 * CLEAR REG 0
0034AE CD25 34E0 MVWZ SPEED,R5 * CLEAR BUFFER
0034B2 8028 2FAF 34E1 MVB DSN52,SPEED+1 * MOVE DIAG SENSE BYTE TO WORD POUND
0034B8 EA29 34E0 MD SPEED,R2 * PERFORM MULTIPLICATION
0034BC D228 34E0 MVD R2,SPEED MOVE RESULTS OF 2ND OP TO BUFFER
0034C0 D026 34E0 AD SPEED,R0 ADD THE ABOVE RESULTS
0034C4 E829 34DC MD D55,R0 MULTIPLY THAT RESULT BY 55 THEN
0034C8 E82A 34DE DD D100,R0 DIVIDE THE RESULT BY 100
0034CC 7A06 0000 CWT 0,R2 ROUND QUOTIENT TO NEXT INTEGER IF
0034D0 1002 3408 JE XTMDG-4 * REMAINDER NOT EQUAL TO 0
0034D2 D026 303A AD ZERO0,R0 *
0034D6 D028 34E0 MVD R0,SPEED SAVE RESULTS
0034DA 5600 3411 XTMDG BXS (R6)
0034DC 0037 3412 *
0034DE 0064 3413 D55 DC F'55' DECIMAL 55 (WORK CONSTANT)
0034E0 00000000 3414 D100 DC F'100' DECIMAL 100 (WORK CONSTANT)
0034E4 00000000 3415 SPEED DC 2A(*-*) WORK BUFFER
002FAE 3416 RGPUF DC 2F'0' READ BUFFER
002FAF 3417 DSN51 EQU CST12 DIAG SENSE BYTF 1
002FB0 3418 DSN52 EQU CST12+1 DIAG SENSE BYTE 2
002FB1 3419 DSN53 EQU CST13 DIAG SENSE BYTE 3
002FA3 3420 WRAP EQU CST13+1 DIAG WRAP BYTE
3421 SNSE EQU CST16+1 SENSE OR STATUS BYTE
3422 COPY T7A50 23MAY78
3423 T7A50 TUIT 1
3424 *****06FEB76**
3425**
3426** TEST UNIT
3427**
3428**
3429**
3430** PURPOSE
3431**
3432** TEST THE CONFIGURATION RECORD FOR A FILE PRESENT AT THIS
3433** ADDRESS.
3434**
3435** CALLING SEQUENCE
3436**
3437** MDI=@TUXX,T7A50,1,80,OF'
3438**
3439** TURESUL BIT(S) 0 - .....FILE NOT ATTACHED
3440**
3441** RETURN CONTROL
3442**
3443** B TURTN* RETURN TO MDI SUPERVISOR
3444**
3445*****
3446+T7A50 MVW R7,TURTN SAVE RETURN ADDRESS
0034E8 6F0D 2FBA 7A50 MVI X'7A01',STUID SAVE TU ID FOR DISPLAY
0034EC 4020 2F78 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
0034F2 4424 2F72
3449**
3450 MVDZ TURESUL,R0 CLEAR THE RESULTS AREA
0034F6 D025 18C8 MVA TURESUL,R2 LOAD RESULTS BASE REG.
0034FA 4224 18C8 CB NULL,DEVADD+4 TEST IF NO FILE ATTACHED
0034FE 802B 350C 19D4 JNE T7A50X NO CONTINUE THIS MAP
003504 1801 3454 TPTS (R2,0) SET NO FILE BIT ON
003506 4440 3455 T7A50X TXIT * RESULTS AND EXIT
003508 6802 32E8 3456+T7A50X B $CONX RETURN TO MDI CONTROLLER
3457*****
00350C FFFF 3458 NULL DC X'FFFF' MASK FOR NULL ENTRY
3460 COPY T7A01 09JAN78
3461 T7A01 TUIT 1
3462*****06FEB76**
3463**
3464** TEST UNIT
3465**
3466** DIRECT PROGRAM CONTROL TEST UNIT
3467**
3468** PURPOSE
3469**
3470** THREE PARAMETERS ARE NEEDED FOR THE EXECUTION OF THIS TU AND ARE
3471**
3472** 1. ONE BYTE OF FUNCTION-MODIFIER,IE, X'60' FOR PREPARE
3473** 2. TWO BYTES OF DATA TO BE USED IN THE SECOND PART OF THE IDCB,
3474** IE, X'0005' TO SELECT LEVEL 2 FOR AN INTERRUPT.
3475**
3476** CALLING SEQUENCE
3477**
3478** MDI=@TUXX,T7A01,2,0708,EQ,PLNG=6,PRAM=FMXXXX'
3479**
3480** TURESUL BIT(S) 0 - 15.....OIO CONDITION CODE
3481** 16 - 21.....SECOND WORD OF IDCB
3482**
3483** RETURN CONTROL
3484**
3485** B TURTN* RETURN TO MDI SUPERVISOR
3486**
3487*****
3488+T7A01 MVW R7,TURTN SAVE RETURN ADDRESS
00350E 6F0D 2FBA 7A01 MVI X'7A01',STUID SAVE TU ID FOR DISPLAY
003512 4020 2F78 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
003518 4424 2F72
3491**
3492** MVA INTBL,R7 SET R7 TO CONTROL BLOCK AND
3493** SVC CIBC * CONNECT IT TO THIS DEVICE
00351C 4724 324A 3494 MVWI X'0708',STI0IN INIT THE CONDITION CODES
003520 6014 3495 MVA TUPARM1,R1 SET UP PARAM ADRS
003522 4020 2F7A 0708 MVB (R1)+T7A01I * AND SET IN FUNCTION-MODIFIER
003528 6908 189A 3496 MVB DEVADD,T7A01I+1 * FOLLOWED BY THE DEVICE ADRS
00352C 8118 3570 3497 MVB (R1)+T7A01I+2 * AND LOAD IMMEDIATE DATA
003530 8028 19D0 3571 MVB (R1)+T7A01I+3 *
003536 8118 3572 MVD T7A01I,R0 GET FUNCTION, MODIFIER AND DEV ADRS
00353A 8108 3573
00353E D020 3570
3501 *
003542 680C 3570 IO T7A01I ISSUE THE I/O COMMAND AND
003546 70AF CPLSR R5 * GET THE I/O CONDITION CODE IN R5
003548 356A SRL 13,R5 RIGHT-JUSTIFY CC AND SAVE IT
00354A C528 2F7A 3505 MVB R5,$I0IN * IN THE RESULTS FIELD
00354E 3042 3506 SRL 8,R0 POSITION PUNC/MOD IN RIGHTMOST BYTE
003550 F06F 3507 CBI X'6F',R0 WAS A DEVICE RESET DONE?
003552 1803 3508 JNE DLYD+4 NO - SKIP DELAY
003554 0DFE 3509 MVI -1,R5 SET UP DELAY COUNT
003556 6002 3510 SVC IDLE DELAY
003558 BDPE 3511 JCT DLYD,R5 *
00355A 3022 3512 SRL 4,R0 POSITION PUNC IN RIGHTMOST BYTE

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17A20 --- CHANNEL/4963 DISK UNIT P/N=8327653 EC=375222 PAGE 13A

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976

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00355C F002 3513 CBI X'02',R0 WAS A READ OR READ STATUS OP EXEC?
00355E 1D03 3514 JGT T7A01X NO - SEND BACK ONLY OIO CC
003560 8828 3572 18CA 3515 MVW T7A01I+2,TUPESUL+2 LOAD DATA READ INTO RESULTS AREA
003566 8828 2F7A 18C8 3516 T7A01X MVW $T0IN,TURESUL PUT ANY INTR COND CODE FOUND IN
3517 TXIT * RESULTS AND EXIT
00356C 6802 32E8 3518 B $CONX RETURN TO MDI CONTROLLER
3519*****
3520**
3521** IDCB FOR DIRECT PROGRAM CONTROL COMMAND
3522**
3523 T7A01I DC X'0000' FUNCTION-MODIFIER-DEVICE ADDRESS
003570 0000 DC X'0000' IMMEDIATE DATA BUFFER
003572 0000 COPY T7A03 09JAN78
3526
3527 T7A03 TUIT
3528*****06FEB76**
3529**
3530** TEST UNIT
3531**
3532** DIRECT PROGRAM CONTROL INTERRUPTING CMDS
3533**
3534** PURPOSE
3535**
3536** THREE PARAMETERS ARE NEEDED FOR THE EXECUTION OF THIS TU AND ARE:
3537**
3538** 1. ONE BYTE OF FUNCTION-MODIFIER,IE, X'4X' FOR DPC WRITE,
3539** 2. TWO BYTES OF DATA TO BE USED IN THE SECOND PART OF THE IDCB,
3540** IE, X'0005' TO BE SENT TO THE DEVICE.
3541**
3542** THIS TEST UNIT PREPARES THE DEVICE AND EXPECTS AN INTERRUPT
3543** AND WILL SEND BACK THE CONDITION CODES OF THE I/O AND INTR.
3544**
3545** CALLING SEQUENCE
3546**
3547** MDI=@TUXX,T7A03,2,0708,EQ,PLNG=6,PAPM=FMXXXX'
3548**
3549** TURESUL BIT(S) 0 - 15.....OIO CC, INTR CC
3550** 16 - 23.....INTERRUPT STATUS BYTE
3551** 24 - 31.....CYCLE STEAL STATUS IO/INTR ERROR
3552** 32 - 47.....CYCLE STEAL STATUS WORD 4
3553** 48 - 63.....CYCLE STEAL STATUS WORD 5
3554**
3555** RETURN CONTROL
3556**
3557** B TURTN* RETURN TO MDI SUPERVISOR
3558**
3559*****
3560+T7A03 MVW R7,TURTN SAVE RETURN ADDRESS
003574 6F0D 2FBA 7A03 MVI X'7A03',STUID SAVE TU ID FOR DISPLAY
003578 4020 2F78 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
003582 6E03 3252 3563+ BAL $CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
003586 3286 3564+ DC A(SER$) ERROR ADRS FOR INVALID PREP
3565**
3566 MVA TURESUL,R2 LOAD ADDR TURESULS BUFF IN REG 2
003588 4224 18C8 MVI X'0708',STI0IN INIT THE CONDITION CODES
00358C 4020 2F7A 0708 MVB TUPARM1,R1 SET UP PARAM ADRS
003592 6908 189A MVB (R1)+T7A03L * AND SET IN FUNCTION-MODIFIER
003596 8118 35E4 MVB DEVADD,T7A03L+1 * FOLLOWED BY THE DEVICE ADRS
003598 8028 19D0 35E5 MVB (R1)+T7A03L+2 * AND SET IN EVEN BYTE DATA
0035A0 8118 35E6 MVB (R1)+T7A03L+3 * AND SET IN ODD BYTE DATA
0035A4 8118 35E7 MVD T7A03L,R0 GET FUNCTION, MODIFIER AND DEV ADRS
0035A8 D020 35E4
3574 *
3575 IO T7A03L * AND THE SECOND WORD OF THE IDCB
0035AC 680C 35E4 3576 CPLSR R5 ISSUE THE I/O COMMAND AND
0035B0 70AF 3577 SRL 13,R5 * GET THE I/O CONDITION CODE IN R5
0035B2 356A 3578 MVB R5,$I0IN * POSITION CC IN THE RESULTS FIELD
0035B4 C528 2F7A 3579 MVI -1,R5 * AND SAVE IT IN THE RESULTS
0035B8 0DFE 3580 T7A03X SVC IDLE SET UP FOR DELAY
0035BA 6002 3581 TBTR (R4,IN) WAIT FOR INTERRUPT
0035BC 4CA3 3582 JN T7A03M HAS IT COME YET
0035BE 1201 3583 JCT T7A03K,R5 * YES - GET OUT OF DELAY
0035C0 BDFC 3584 T7A03M MVD $T0IN,TURESUL * NO - CHECK FOR TIME OUT
0035C2 9028 2F7A 18C8 3585 MVBZ TURESUL+3,R0 PUT ANY INTR COND CODE FOUND IN
0035C4 C025 18CB 3586 BAL XICCS,R6 CLEAR BYTE 3 OF TURESULS BUFFER
0035C6 6E03 3142 3587 DC A(I03ER) GET CYCLE STEAL STATUS
0035D0 35E0 3588 TBT (R4,ER) OIO ERROR
0035D2 4C21 3589 JON I03ER EXCEPTION INTERRUPT OCCUR?
0035D4 1205 3590 MVD CSTL5,TURESUL+4 YES - SET CSS INTR ERROR BIT ON
0035D6 9028 2FA0 18CC 3591 X7A03 TXIT * RESULTS AND EXIT
0035DC 6802 32E8 3592+X7A03 B $CONX RETURN TO MDI CONTROLLER
3593*****
3594**
3595 IO3ER TBTS (R2,24) CYCLE STEAL STATUS OIO ERROR
0035E0 4A58 J X7A03 RETURN TO MDI
0035E2 50FC
3597 *
3598** IDCB FOR DIRECT PROGRAM CONTROL COMMAND
3599**
3600 T7A03L DC X'0000' FUNCTION-MODIFIER-DEVICE ADDRESS
0035E4 0000 DC X'0000' IMMEDIATE DATA BUFFER
0035E6 0000 COPY T7A06 09JAN78
3603
3604 T7A06 TUIT
3605*****06FEB76**
3606**
3607** TEST UNIT
3608**
3609** ISSUE CYCLE STEAL COMMANDS
3610**
3611** PURPOSE
3612**
3613** TO RECALIBRATE, SEEK TO SPECIFIED CYLINDER, READ SECTOR ID,
3614** READ DIAG WORD '1', AND READ VERIFY.
3615**
3616** CALLING SEQUENCE
3617**
3618** MDI=@TUXX,T7A06,XX,XXXX,XX,PKNG=4,PARM=XXXX
3619**
3620** TURESULS BIT(S) 0 - 7 ..... SENSE BYTE (STATUS)
3621** OR 0 - 15 ..... TRACK ID (HD/CYL)/DIAG WORD 1
3622** 16 - 31 ..... CYCLE STEAL STATUS WORD 4
3623** 32 - 47 ..... CYCLE STEAL STATUS WORD 5
3624** 48 - 63 ..... CYCLE STEAL STATUS WORD 11
3625** 64 - 79 ..... CYCLE STEAL STATUS WORD 12
3626**
3627** RETURN CONTROL
3628**

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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
3629** B TURTN* RETURN TO MDI SUPERVISOR
3630**
3631** *****
0035E8 6F0D 2FBA 7A06 MVB R7,TURTN SAVE RETURN ADDRESS
0035EC 4020 2F78 MVI X'7A06',STUID SAVE TU ID FOR DISPLAY
0035F6 4224 2F72 MVA OPTN1,R4 SET UP POINTER ADRS IN R4
0035FA 6E03 3252 BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
0035FC 3286 DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
0035FE 4C64 TBTS (R4,XE) SET EXPECTED ERROR CNTL BIT ON
0035FF 403F 189A 0001 CWI X'0001',TUPARM1* WANT TO RECALIBRATE FILE?
003600 1805 JNE CHK1 NO - CHECK FOR NEXT OP
003601 6E03 308E BAL \$RECL,R6 RECALIBRATE FILE
003602 3286 DC A(\$ERR\$) *
003603 6802 36AC B SNSTS BRANCH TO READ/STORE SENSE BYTE
003604 403F 189A 0000 *
003605 180A CHK1 CWI X'0000',TUPARM1* IS A SEEK OPERATION TO BE PERFORMED?
003606 6E03 308E MVB SKDCB,R0 NO GO ISSUE READ SECTOR ID OP
003607 8224 2FFA MVI TUPARM2*,SKDCB+4 LOAD SEEK CNTL WD IN DCB
003608 6E03 308E BAL \$SEK,R6 LOAD HD/CYL NUMBERS IN SEEK DCB
003609 3286 DC A(\$ERR\$) SEEK TO SPECIFIED CYL
003610 6802 36AC B SNSTS *
003611 * BRANCH TO READ/STORE SENSE BYTE
003612 *
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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYPIGHT IBM CORP 1976
003706 6E03 30D4 3744 BAL \$WRTO,R6 EXECUTE SINGLESAMPLE PUSLE TEST
003707 3286 DC A(\$ERR\$) ABORT TEST IF ERROR
003708 4CA1 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
003709 6E03 3142 BAL XIOC5,R6 GET CYCLE STEAL STATUS
003710 3286 DC A(\$ERR\$) ABORT ON ERROR
003711 9028 2FAE 1820 MVD CST12,TUWORK+6 LOAD MULTISAMPLE PULSE IDC B CMD WD
003712 4020 3244 0056 MVI X'0056',IOMOD SAVE THE DIAG. SENSE BYTES
003713 6E03 30D4 BAL \$WRTO,R6 EXECUTE MULTISAMPLE PUSLE TEST
003714 3286 DC A(\$ERR\$) ABORT TEST IF ERROR
003715 4CA1 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
003716 4020 3244 0057 MVI X'0057',IOMOD LOAD WRAP BYTE IDC B CMD WD
003717 6E03 30D4 BAL \$WRTO,R6 FETCH WRAP BYTE
003718 3286 DC A(\$ERR\$) ABORT TEST IF ERROR
003719 4CA1 TBTR (R4,ER) WAS THERE AN EXCEPTION INTERRUPT?
003720 6E03 3142 BAL XIOC5,R6 GET CYCLE STEAL STATUS
003721 3286 DC A(\$ERR\$) ABORT ON ERROR
003722 9028 2FAE 1824 MVD CST12,TUWORK+10 SAVE THE DIAG. SENSE BYTES
003723 8828 181A 18C8 MVI TUWORK2,TURESUL MOVE INTO TU RESULTS AREA
003724 9028 181C 18CA *
003725 9028 1820 18CE MVD TUWORK+6,TURESUL+6 *
003726 9028 1820 18D2 MVD TUWORK+10,TURESUL+10 *
003727 402B 181C 0001 TWI X'0001',TUWORK+2 CHECK INTERFACE ERROR?
003728 1202 JON T7A89 YES EXIT
003729 402B 181C 0001 MVBZ TURESUL+13,R0 CLEAR WRAP BYTE IF NO ERROR
003730 TXIT
003731 B \$CONX RETURN TO MDI CONTROLLER
003732 *****
003733 COPY T7A09 09JAN78
003734 T7A09 TUIT *****
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LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
3859 TXIT
3860+ B \$CONX RETURN TO MDI CONTROLLER
003844 6802 32E8
3861+*****
3862+
3863 TRKNO DC A(*-*) WORK CONSTANT
003848 0000
3865 COPY T7A10 09JAN78
3866 T7A10 TUIT *****06FEB76**
3867+
3868**
3869** TEST UNIT
3870**
3871** ERROR HALT CODE/DIAG SENSE BYTE CHECK
3872**
3873** PURPOSE
3874**
3875** TO MOVE THE ERROR HALT CODE, STATUS BYTE, AND DIAG BYTES 1,2 3
3876** TO THE TU RESULTS BUFFER (TURESUL).
3877**
3878** MDI=\$TUXX,T7A10,01,0708,EQ
3879**
3880** TURESUL BIT(S) 0-7 ERROR HALT CODE
3881** - 8-15 STATUS (SENSE) BYTE
3882** - 16-23 SINGLE SHOT BYTE 1 (5-HURSLEY)
3883** - 24-31 SINGLE SHOT BYTE 2 (6-HURSLEY)
3884** - 32-39 SINGLE SHOT BYTE 3 (7-HURSLEY)
3885** - 48-55 NOT USED
3886** - 56-63 MULTISAMPLE BYTE 1 (5-HURSLEY)
3887** - 64-71 MULTISAMPLE BYTE 2 (6-HURSLEY)
3888** - 72-79 MULTISAMPLE BYTE 3 (7-HURSLEY)
3889** - 80-87 WRAP BYTE
3890**
3891** CALLING SEQUENCE
3892**
3893** MVW TWORK,TURESUL MOVE ERROR HALT CODE & STATUS BYTES
3894** MVD TWORK+6,TURESUL+2 SINGLE SHOT BYTES 1, 2, AND 3
3895** MVD TWORK+10,TURESUL+6 MULTISAMPLE BYTES 1, 2, AND 3
3896** AND WRAP BYTE
3897** RETURN CONTROL
3898**
3899** B TURTN* RETURN TO MDI SUPERVISOR
3900**
3901+*****
3902+T7A10 MVW R7,TURTN SAVE RETURN ADDRESS
3903+ MVWI X'7A10',STUID SAVE TU ID FOR DISPLAY
3904+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
3905+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
3906+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
3907**
3908 MVD TWORK+2,TURESUL+10 MOVE ERROR WORDS 4,5
3909 MVB TWORK+13,TURESUL+5 MOVE WRAP CHECK RESULTS
3910 TXIT
3911+ B \$CONX RETURN TO MDI CONTROLLER
3912+*****
3913+ COPY T7A11 09JAN78
3914 T7A11 TUIT *****06FEB76**
3915+
3916+
3917**
3918** TEST UNIT
3919**
3920** SEEK SPEED CHECK
3921**
3922** PURPOSE
3923**
3924** TO VERIFY THAT THE AVERAGE ACCESS TIME OF MULTIPLE SEEKS WHICH
3925** INCLUDE 1 AND 359 TRACK LENGTH SFEKS IS < 27 MS (27000 US).
3926** 100 SEEKS ARE TIMED.
3927**
3928** CALLING SEQUENCE
3929**
3930** MDI=\$TUXX,'T7A11,01,80,OF'
3931**
3932** TURESUL BIT(S) 0 INCORRECT SEEK SPEED
3933** - 1 CYCLE STEAL STATUS ERROR
3934** - 2-15 NOT USED
3935** - 16-47 CYCLE STEAL STATUS WORDS 4 AND 5
3936**
3937** RETURN CONTROL
3938**
3939** B TURTN* RETURN TO MDI SUPERVISOR
3940**
3941+*****
3942+T7A11 MVW R7,TURTN SAVE RETURN ADDRESS
3943+ MVWI X'7A11',STUID SAVE TU ID FOR DISPLAY
3944+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
3945+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
3946+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
3947**
3948 MVDZ TSEEK,R0 CLEAR ACCUM ACCESS-TIME WORK AREA
3949 MVDZ TURESUL,R0 CLEAR TU RESULTS BUFFER
3950 MVWZ TURESUL+4,R0 CLEAR TU RESULTS BUFFER
3951 MVWI X'0001',SKDCB LOAD TMDG/SEK DIAG DCB CNTL WD
3952 MVWI X'0567',SKDCB+4 LOAD HEAD/CYLINDER PARM IN SEEK DCB
3953 MVWI 359,TRKNO INITIALIZE CYLINDER WORK PARAMETER
3954 MVWI 100,CTR03 INITIALIZE SEEK COUNTER
3955 TSKK1 BAL \$RECL,R3 RECALIBRATE
3956 DC A(\$ERR\$) ABORT TEST IF ERROR
3957 BAL \$SEEK,R6 EXECUTE TIMED SEEK DIAG
3958 DC A(\$ERR\$) ABORT TEST IF ERROR
3959 BAL VSEEK,R6 READ SECTOR ID
3960 CW SCTID+2,SKDCB+4 ACCESS AS EXPECTED?
3961 BNE U7A11 ABORT TEST IF SEEK ERROR
3962 BAL XIOCS,R6 FETCH DIAG SENSE BYTES 1 AND 2
3963 DC A(\$ERR\$) ABORT TEST IF ERROR
3964 TWI X'0008',CSTL5 WAS THERE A CS STATUS ERROR?
3965 JON STSER FILE STATUS ERROR OCCURRED
3966 BAL TMDIG,R6 CALCULATE TIME OF SEEK
3967 AD R0,TSEEK ADD TIME TO SUM IN BUFFER
3968 SWI 1,CTR03 HAVE 100 ACCESSES BEEN TIMED?
3969 JNP CHKTM YES - CALC AVEARAGE ACCESS TIME
3970 SWI 1,TRKNO ADJUST CYL# FOR NEXT TIMED ACCESS
3971 JNEV ODRK * AND GO SEEK TO THAT CYLINDER
3972 SW TRKNO,SKDCB+4 *
3973 J TSKK1 *
3974 ODRK AW TRKNO,SKDCB+4 *

LOCTR OBJECT TEXT STMT SOURCE STATEMENT COPYRIGHT IBM CORP 1976
3975 TSKK1 J TSEEK,R0 *
3976 CHKTM MVD TSEEK,R0 GET ACCUMULATE SUM OF ACCESS TIMES
3977 DD D100,R0 DIVIDE BY THE NUMBER OF SEEKS
3978 CWI 2700,R1 CHECK AVERAGE ACCESS TIME < 27MS
3979 JLT X7A10,R1 RETURN TO MDI IF CORRECT
3980 U7A11 MVA TURESUL,R2 PUT ADDR OF TU RESULTS BUFFER IN R2
3981 TBTS (R2,0) SET INCORRECT SEEK TIME BIT ON
3982 J X7A11 GO STOPE CSS BEFORE EXITING
3983 STSER OWI X'4000',TURESUL SET FILE STATUS ERROR BIT ON
3984 X7A11 MVD CSTL5,TURESUL+2 STORE CS STATUS WDS 4 & 5 IN TU AREA
3985 TXIT
3986+ B \$CONX RETURN TO MDI CONTROLLER
3987+*****
3988 *
3989 TSEEK DC 2A(*-*) ACCUMULATED SEEK TIME BUFFER
3990 COPY T7A12 09JAN78
3991 T7A12 TUIT *****06FEB76**
3992+
3993+
3994**
3995** TEST UNIT
3996**
3997** DISK SPEED CHECK
3998**
3999** PURPOSE
4000**
4001** TO VERIFY THAT THE DISK SPEED IS WITHIN 2.5% OF THE NOMINAL
4002** DISK SPEED (3125 RPM).
4003** - 18720 US <= 1 DISK REVOLUTION <= 19680 US
4004**
4005** CALLING SEQUENCE
4006**
4007** MDI=\$TUXX,'T7A12,01,80,OF'
4008**
4009** TURESUL BIT 0 INCORRECT DISK SPEED
4010** 1 CYCLE STEAL STATUS ERROR
4011** RETURN CONTROL
4012**
4013** B TURTN* RETURN TO MDI SUPERVISOR
4014**
4015+*****
4016+T7A12 MVW R7,TURTN SAVE RETURN ADDRESS
4017+ MVWI X'7A12',STUID SAVE TU ID FOR DISPLAY
4018+ MVA OPTN1,R4 SET UP POINTER ADRS IN R4
4019+ BAL \$CONC,R6 CLEAR DEV DEP STG AND CONNECT I/O BL
4020+ DC A(\$ERR\$) ERROR ADRS FOR INVALID PREP
4021**
4022 *
4023 * 2 - 15 NOT USED
4024 * 16 - 47 CYCLE STEAL STATUS WDS 4 AND 5
4025 *
4026 MVDZ TURESUL,R0 CLEAR RESULTS BUFFER
4027 MVWZ TURESUL+4,R0 CLEAR RESULTS BUFFER
4028 MVWI X'005A',TOMOD LOAD DISK SPEED TIMG DIAG IDCB F/MOD
4029 BAL \$WRT,R6 EXECUTE DISK SPEED TIMING DIAG
4030 DC A(\$ERR\$) ABORT TEST IF ERROR
4031 BAL XIOCS,R6 READ CYCLE STEAL STATUS
4032 DC A(\$ERR\$) ABORT TEST IF ERROR
4033 TWI X'0008',CSTL5 WAS THERE A CS STATUS ERROR?
4034 JON CTSRR YES - SET RESULTS BIT ON
4035 BAL TMDIG,R6 CALC SPEED OF DISK VIA CAP FORMULA
4036 DD D20,R0 DIVIDE BY DECIMAL 20
4037 CWI 18720,R1 CHECK THAT SPEED IS WITHIN BOUNDS
4038 JLLT TMERR * AND SET ERROR BIT ON IN 'TURESUL'
4039 JLE X7A12 * IF DISK SPEED IS INCORRECT
4040 THERR MVA TURESUL,R2 RETURN TO MDI
4041 TBTS (R2,0) PUT ADDR OF RESULTS BUFFER IN R2
4042 X7A12 MVD CSTL5,TURESUL+2 SET 'INCORRECT DISK SPEED' BIT ON
4043 TXIT STORE CS STATUS WD 4 & 5 IN TU BUF
4044+ B \$CONX RETURN TO MDI CONTROLLER
4045+*****
4046 *
4047 CTSRR OWI X'4000',TURESUL SET CS STATUS ERROR BIT ON
4048 J X7A12
4049 *
4050 D20 DC X'0014' DECIMAL 20 CONSTANT
4051 COPY T7A19 28MAR78
4052 T7A19 TUIT *****06FEB76**
4053+
4054+
4055**
4056** TEST UNIT
4057**
4058** FILE DIAGNOSTIC WRAP TEST
4059**
4060** PURPOSE
4061**
4062** LOAD LOW ORDER CYLINDER NUMBER OF FCB WITH PATTERN
4063** BY DOING A RECALIBRATE WITH THE PATTERN IN THE DCB.
4064** WRITE TO CAP SEEK REQUIRED ADDRESS REGISTER DIRECT.
4065** CHECK FOR NO ERRORS. SENSE FILE DIAGNOSTIC WRAP AND CHECK
4066** FOR NO ERRORS. PATTERNS USED ARE FF, AA, 55, AND 00.
4067** VERIFY PATTERN READ IS AS WRITTEN.
4068**
4069** CALLING SEQUENCE
4070**
4071** MDI=\$TUXX,'T7A19,02,00,EQ'
4072**
4073** TURESULS BIT(S) 0 WRAP FAILURE DATA MISCOMPARE
4074** - 1 ERR ON WRT SEEK REQD ADDR REG
4075** - 2 ERROR ON READ DIAG WRAP
4076** - 3 DISK UNIT PARITY FAILURE
4077** - 4 CS STATUS ERROR (BIT 12-WORD 4)
4078** - 5 CS STATUS IO/INTERRUPT ERROR
4079** - 6 - 7 NOT USED
4080** - 8 - 15 DATA PATTERN IN USE WITH ERROR
4081** - 16 - 47 CYCLE STEAL STATUS WORDS 4 & 5
4082** - 48 - 55 BYTE 2 OF CSS WORD 12 (WRAP BYTE)
4083**
4084** RETURN CONTROL
4085**
4086** B TURTN* RETURN TO MDI SUPERVISOR
4087**
4088+*****
4089+T7A19 MVW R7,TURTN SAVE RETURN ADDRESS
4090+ MVWI X'7A19',STUID SAVE TU ID FOR DISPLAY

LOCTR	OBJECT TEXT	STMT	SOURCE STATEMENT	COPYRIGHT IBM CORP 1976
00398E	4424 2F72	4091+	MVA OPTN1,R4	SET UP POINTER ADRS IN R4
003992	6E03 3252	4092+	BAL \$CONC,R6	CLEAR DEV DEP STG AND CONNECT I/O BL
003996	3286	4093+	DC A(\$ERR\$)	ERROR ADRS FOR INVALID PREP
003998	D025 18C8	4095	MVDZ TURESUL,R0	CLEAR TU RESULTS BUFFER
00399C	D025 18CC	4096	MVDZ TURESUL+4,R0	CLEAR TU RESULTS BUFFER
0039A0	4224 18C8	4097	MVA TURESUL,R2	SETUP ADDR OF TURESUL IN REG 2
0039A4	4020 3066	4098	MVWI 6,LPCNT	SET UP LOOP COUNT
0039AA	6908 3066	4099	DPAT2 MVW LPCNT,R1	*
0039AE	6B28 3068	4100	MVW (R1,PDATA),R3	GET PATTERN TO BE WRITTEN
0039B2	C328 2FDF	4101	MVB R3,CLDCB+5	SETUP LOW ORDER CYL# WITH PATTERN
0039B6	6E03 308E	4102	BAL \$RECL,R6	LOAD PATTERN IN LOW ORDER CYL# IN
0039BA	3286	4103	DC A(\$ERR\$)	PCP. ABORT TEST IF OIO ERROR
0039BC	4C21	4104	TBT (R4,ER)	EXCEPTION INTERRUPT OCCUR?
0039BE	6A00 3A10	4105	J STS	YES - ABORT, IT WORKED BEFORE
0039C2	C328 18C9	4106	MVB R3,TURESUL+1	MOVE PATTERN TO TURESULS
0039C6	4020 3244	4107	MVWI X'0052',IOMOD	SETUP SEEK REQD ADDR DIRECT IDCR
0039CC	6E03 30D4	4108	BAL \$SWRT0,R6	WRITE TO SEEK REQD ADDR REG DIR
0039D0	3286	4109	DC A(\$ERR\$)	ABORT TEST IF OIO ERROR
0039D2	4C21	4110	TBT (R4,ER)	EXCEPTION INTERRUPT OCCUR?
0039D4	121A	4111	JON DIRER	YES - SET ERROR ON WRITE BIT ON
0039D6	4020 3244	4112	MVWI X'0057',IOMOD	SENSE FILE DIAG WRAP BYTE
0039DC	6E03 30D4	4113	BAL \$SWRT0,R6	SENSE FILE DIAG WRAP
0039E0	3286	4114	DC A(\$ERR\$)	ABORT TEST IF OIO ERROR
0039E2	4C21	4115	TBT (R4,ER)	EXCEPTION INTERRUPT OCCUR?
0039E4	121A	4116	JON DIRER+4	YES - SET ERROR ON READ BIT ON
0039E6	5014	4117	J STS	GO READ WRAP BYTE
0039EC	6908 3068	4118	CKPAT MVW LPCNT,R1	VERIFY THAT DATA PATTERN READ
0039F0	C324 2FB1	4119	MVW (R1,PDATA),R3	IS AS WRITTEN (CHECK WRAP BYTE)
0039F4	1808	4120	CB CST13+1,R3	*
0039F6	402E 3066	4121	JNE PAT2	SET BIT ON IN TURESUL IF DATA ERR
0039FC	1AD6	4122	SWI 2,LPCNT	DECREASE LPCNT TO GET NEXT PATTERN
0039FE	C025 18C9	4123	JNN DPAT2	NO - CONTINUE TEST
003A02	6802 32E8	4124	MVBZ TURESUL+1,R0	CLEAR PATN IN TURESULS IF NO ERRS
		4125	X7A16 TXIT	RETURN TO MDI
		4126	X7A16 B	RETURN TO MDI CONTROLLER
		4127	*****	*****
		4128	*	*****
003A06	4A40	4129	PAT2 TBTS (R2,0)	SET RESULTS BIT ON FOR DATA ERROR
003A08	50FC	4130	J X7A16	RETURN TO MDI
003A0A	4841	4131	DIRER TBTS (R2,1)	ERROR ON WRITE
003A0C	5000	4132	J *+2	GO GET CYCLE STEAL STATUS
003A0E	4A42	4133	TBTS (R2,2)	ERROR ON READ
003A10	6E03 3142	4134	STS BAL XIOCS,R6	GET CYCLE STEAL STATUS
003A14	3286	4135	DC A(\$ERR\$)	ABORT TEST IF ERROR
003A16	8028 2FB1 1828	4136	MVB CST13+1,TUWORK+14	MOVE WRAP BYTE IN TURESULS BUFFER
003A1C	50E5	4137	J CKPAT	NO - RETURN TO MDI
003A1E	4A44	4138	NOST1 TBTS (R2,4)	CSS ERROR BIT 15 ON WORD 4
003A20	50F0	4139	J X7A16	RETURN TO MDI
003A22	4A45	4140	CSER1 TBTS (R2,5)	CYCLE STEAL STATUS EXCEPTION INTR
003A24	50EE	4141	J X7A16	RETURN TO MDI
		4142	*	*****
000000		4144	END	*****

DECLARED	NAME	ATTRIBUTES AND REFERENCES	COPYRIGHT IBM CORP 1976
3236	\$CONC	ADDRESS. HEX LOCATION(00003252) IN CSECT(I7A20) LENGTH(2)	
3305	\$CONX	ADDRESS. HEX LOCATION(000032E8) IN CSECT(I7A20) LENGTH(1)	
3278	\$ERRS	ADDRESS. HEX LOCATION(00003286) IN CSECT(I7A20) LENGTH(6)	
2026	\$INTL	ADDRESS. HEX LOCATION(00002FB8) IN CSECT(I7A20) LENGTH(2)	
1991	\$IOIN	ADDRESS. HEX LOCATION(00002F7A) IN CSECT(I7A20) LENGTH(2)	
1992	\$ISB	ADDRESS. HEX LOCATION(00002F7C) IN CSECT(I7A20) LENGTH(2)	
1976	\$LE	ABSOLUTE. HEX VALUE(00000026)	
2324	\$RD	ADDRESS. HEX LOCATION(000030B0) IN CSECT(I7A20) LENGTH(2)	
2316	\$RDID	ADDRESS. HEX LOCATION(00003096) IN CSECT(I7A20) LENGTH(6)	
2331	\$RDVY	ADDRESS. HEX LOCATION(000030C4) IN CSECT(I7A20) LENGTH(6)	
2313	\$RECL	ADDRESS. HEX LOCATION(0000308E) IN CSECT(I7A20) LENGTH(6)	
2310	\$SEEK	ADDRESS. HEX LOCATION(00003086) IN CSECT(I7A20) LENGTH(6)	
1990	\$TUID	ADDRESS. HEX LOCATION(00002F78) IN CSECT(I7A20) LENGTH(2)	
2337	\$WRT0	ADDRESS. HEX LOCATION(000030D4) IN CSECT(I7A20) LENGTH(4)	
2358	\$WRT1	ADDRESS. HEX LOCATION(00003114) IN CSECT(I7A20) LENGTH(2)	
42	@CALL	ABSOLUTE. HEX VALUE(00000201)	
102	@DCADD1	ADDRESS. HEX LOCATION(000019B8) IN CSECT(I7A20) LENGTH(1)	
103	@DCADD2	ADDRESS. HEX LOCATION(000019BA) IN CSECT(I7A20) LENGTH(1)	
39	@FIXT	ABSOLUTE. HEX VALUE(00000101)	
41	@GOTO	ABSOLUTE. HEX VALUE(00000200)	
46	@NVLD	ABSOLUTE. HEX VALUE(00000600)	
40	@STOP	ABSOLUTE. HEX VALUE(00000102)	
45	@TUXX	ABSOLUTE. HEX VALUE(00000500)	
3310	BEGIN	ADDRESS. HEX LOCATION(000032F2) IN CSECT(I7A20) LENGTH(2)	
3331	BIT0080	ABSOLUTE. HEX VALUE(00000080)	
3330	BUPPT	ADDRESS. HEX LOCATION(0000344E) IN CSECT(I7A20) LENGTH(2)	
1980	CE	ABSOLUTE. HEX VALUE(0000002A)	
3842	CHKID	ADDRESS. HEX LOCATION(00003806) IN CSECT(I7A20) LENGTH(6)	
3976	CHKTM	ADDRESS. HEX LOCATION(000038F6) IN CSECT(I7A20) LENGTH(4)	
3645	CHK1	ADDRESS. HEX LOCATION(00003610) IN CSECT(I7A20) LENGTH(6)	
3653	CHK2	ADDRESS. HEX LOCATION(0000362C) IN CSECT(I7A20) LENGTH(6)	
3669	CHK3	ADDRESS. HEX LOCATION(0000366E) IN CSECT(I7A20) LENGTH(6)	
3678	CHK4	ADDRESS. HEX LOCATION(0000368E) IN CSECT(I7A20) LENGTH(6)	
2065	CICB	ABSOLUTE. HEX VALUE(00000014)	
4118	CKPAT	ADDRESS. HEX LOCATION(000039E8) IN CSECT(I7A20) LENGTH(4)	
2161	CLDCB	ADDRESS. HEX LOCATION(00002FDA) IN CSECT(I7A20) LENGTH(2)	
1978	CS	ABSOLUTE. HEX VALUE(00000028)	
1979	CSA	ABSOLUTE. HEX VALUE(00000029)	
2009	CSBUF	ADDRESS. HEX LOCATION(00002F98) IN CSECT(I7A20) LENGTH(1)	
2188	CSDCB	ADDRESS. HEX LOCATION(0000300A) IN CSECT(I7A20) LENGTH(2)	
2014	CSTL5	ADDRESS. HEX LOCATION(00002FA0) IN CSECT(I7A20) LENGTH(2)	
2015	CSTL6	ADDRESS. HEX LOCATION(00002FA2) IN CSECT(I7A20) LENGTH(2)	
2021	CST12	ADDRESS. HEX LOCATION(00002FAE) IN CSECT(I7A20) LENGTH(2)	
2022	CST13	ADDRESS. HEX LOCATION(00002FB0) IN CSECT(I7A20) LENGTH(2)	
2235	CTR03	ADDRESS. HEX LOCATION(00003062) IN CSECT(I7A20) LENGTH(2)	
4047	CTSRR	ADDRESS. HEX LOCATION(0000397A) IN CSECT(I7A20) LENGTH(6)	

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1999	DCBUF	ADDRESS. HEX LOCATION(00002F88) IN CSECT(I7A20) LENGTH(1)
3331	DC2PT	ADDRESS. HEX LOCATION(00003450) IN CSECT(I7A20) LENGTH(2)
105	DEVADD	ADDRESS. HEX LOCATION(000019D0) IN CSECT(I7A20) LENGTH(1)
1994	DEV1	ADDRESS. HEX LOCATION(00002F80) IN CSECT(I7A20) LENGTH(2)
1997	DEV4	ADDRESS. HEX LOCATION(00002F86) IN CSECT(I7A20) LENGTH(2)
2150	DGDCB	ADDRESS. HEX LOCATION(00002FCA) IN CSECT(I7A20) LENGTH(2)
4131	DIRER	ADDRESS. HEX LOCATION(00003A0A) IN CSECT(I7A20) LENGTH(2)
3510	DLYD	ADDRESS. HEX LOCATION(00003556) IN CSECT(I7A20) LENGTH(2)
4099	DPAT2	ADDRESS. HEX LOCATION(000039AA) IN CSECT(I7A20) LENGTH(4)
3417	DSNS1	ADDRESS. HEX LOCATION(00002FAE) IN CSECT(I7A20) LENGTH(2)
3418	DSNS2	ADDRESS. HEX LOCATION(00002FAF) IN CSECT(I7A20) LENGTH(1)
67	DUMMY	ABSOLUTE. HEX VALUE(00000000)
3414	D100	ADDRESS. HEX LOCATION(000034DF) IN CSECT(I7A20) LENGTH(2)
4050	D20	ADDRESS. HEX LOCATION(00003982) IN CSECT(I7A20) LENGTH(2)
3413	D55	ADDRESS. HEX LOCATION(000034DC) IN CSECT(I7A20) LENGTH(2)
1890	ENTPT	ADDRESS. HEX LOCATION(00002EA4) IN CSECT(I7A20) LENGTH(1)
47	EQ	ABSOLUTE. HEX VALUE(00000000)
		1009 1021 1041 1065 1088 1100 1120 1135 1159 1182 1194 1214 1241 1261 1288 1308 1335 1367 1387 1402 1426 1449 1461 1481 1496 1520 1543 1555 1575 1590 1614 1637 1652 1676 1699 1711 1755 1802 1843 1858 1870
1971	ER	ABSOLUTE. HEX VALUE(00000021) 3181 3588 3746 3753
2051	EXIT	ABSOLUTE. HEX VALUE(00000006)
3333	FAKETU	ADDRESS. HEX LOCATION(00003454) IN CSECT(I7A20) LENGTH(2)
1929	F00009	ADDRESS. HEX LOCATION(00002F4E) IN CSECT(I7A20) LENGTH(1)
1921	F00032	ADDRESS. HEX LOCATION(00002FOA) IN CSECT(I7A20) LENGTH(1)
1917	F00040	ADDRESS. HEX LOCATION(00002EE6) IN CSECT(I7A20) LENGTH(1)
1909	F00046	ADDRESS. HEX LOCATION(00002EAA) IN CSECT(I7A20) LENGTH(1)
1925	F00483	ADDRESS. HEX LOCATION(00002F34) IN CSECT(I7A20) LENGTH(1)
3339	HEBLK	ADDRESS. HEX LOCATION(00003456) IN CSECT(I7A20) LENGTH(2)
2071	HTOE	ABSOLUTE. HEX VALUE(0000001A)
3855	IDER	ADDRESS. HEX LOCATION(00003830) IN CSECT(I7A20) LENGTH(2)
2047	IDLE	ABSOLUTE. HEX VALUE(00000002)
1973	IN	ABSOLUTE. HEX VALUE(00000023)
3206	INTBL	ADDRESS. HEX LOCATION(0000324A) IN CSECT(I7A20) LENGTH(2)
3101	INTER	ADDRESS. HEX LOCATION(000031AE) IN CSECT(I7A20) LENGTH(2)
3110	INTES	ADDRESS. HEX LOCATION(000031C6) IN CSECT(I7A20) LENGTH(2)
3114	INTET	ADDRESS. HEX LOCATION(000031CE) IN CSECT(I7A20) LENGTH(2)
3853	INTFC	ADDRESS. HEX LOCATION(0000382C) IN CSECT(I7A20) LENGTH(2)
3141	INTOK	ADDRESS. HEX LOCATION(000031D2) IN CSECT(I7A20) LENGTH(2)
63	INTRNL	ABSOLUTE. HEX VALUE(00000000)
3163	INTRX	ADDRESS. HEX LOCATION(00003202) IN CSECT(I7A20) LENGTH(2)
3144	INTR1	ADDRESS. HEX LOCATION(000031DA) IN CSECT(I7A20) LENGTH(2)
3149	INTR2	ADDRESS. HEX LOCATION(000031E8) IN CSECT(I7A20) LENGTH(1)
3157	INTR3	ADDRESS. HEX LOCATION(000031F6) IN CSECT(I7A20) LENGTH(2)
3197	IOBLK	ADDRESS. HEX LOCATION(0000323E) IN CSECT(I7A20) LENGTH(2)
3199	IODCB	ADDRESS. HEX LOCATION(00003242) IN CSECT(I7A20) LENGTH(2)
3200	IOMOD	ADDRESS. HEX LOCATION(00003244) IN CSECT(I7A20) LENGTH(2)
3595	IO3ER	ADDRESS. HEX LOCATION(000035E0) IN CSECT(I7A20) LENGTH(2)
37	I7A20	CSECT. START(00002500) LENGTH(5414) ESDID(1)
3316	LINE1	ADDRESS. HEX LOCATION(0000332A) IN CSECT(I7A20) LENGTH(40)
2237	LPCNT	ADDRESS. HEX LOCATION(00003066) IN CSECT(I7A20) LENGTH(2)
1993	LSTIO	ADDRESS. HEX LOCATION(00002F7E) IN CSECT(I7A20) LENGTH(2)
1970	MI	ABSOLUTE. HEX VALUE(00000020)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
3290	MVBUF	ADDRESS. HEX LOCATION(000032B6) IN CSECT(I7A20) LENGTH(2)
1982	NG	ABSOLUTE. HEX VALUE(0000002C)
1977	NI	ABSOLUTE. HEX VALUE(00000027)
3458	NULL	ADDRESS. HEX LOCATION(0000350C) IN CSECT(I7A20) LENGTH(2)
3828	NXTID	ADDRESS. HEX LOCATION(000037D0) IN CSECT(I7A20) LENGTH(2)
759	N00001	ADDRESS. HEX LOCATION(00002748) IN CSECT(I7A20) LENGTH(2)
771	N00002	ADDRESS. HEX LOCATION(0000275A) IN CSECT(I7A20) LENGTH(2)
774	N00003	ADDRESS. HEX LOCATION(0000275E) IN CSECT(I7A20) LENGTH(2)
786	N00004	ADDRESS. HEX LOCATION(00002774) IN CSECT(I7A20) LENGTH(2)
788	N00005	ADDRESS. HEX LOCATION(00002776) IN CSECT(I7A20) LENGTH(2)
800	N00006	ADDRESS. HEX LOCATION(0000278C) IN CSECT(I7A20) LENGTH(2)
802	N00007	ADDRESS. HEX LOCATION(0000278E) IN CSECT(I7A20) LENGTH(2)
814	N00008	ADDRESS. HEX LOCATION(000027A2) IN CSECT(I7A20) LENGTH(2)
816	N00009	ADDRESS. HEX LOCATION(000027A4) IN CSECT(I7A20) LENGTH(2)
828	N00010	ADDRESS. HEX LOCATION(000027BE) IN CSECT(I7A20) LENGTH(2)
840	N00011	ADDRESS. HEX LOCATION(000027D0) IN CSECT(I7A20) LENGTH(2)
842	N00012	ADDRESS. HEX LOCATION(000027D2) IN CSECT(I7A20) LENGTH(2)
848	N00013	ADDRESS. HEX LOCATION(000027DE) IN CSECT(I7A20) LENGTH(2)
860	N00014	ADDRESS. HEX LOCATION(000027F4) IN CSECT(I7A20) LENGTH(2)
872	N00015	ADDRESS. HEX LOCATION(00002806) IN CSECT(I7A20) LENGTH(2)
874	N00016	ADDRESS. HEX LOCATION(00002808) IN CSECT(I7A20) LENGTH(2)
880	N00017	ADDRESS. HEX LOCATION(00002814) IN CSECT(I7A20) LENGTH(2)
892	N00018	ADDRESS. HEX LOCATION(0000282E) IN CSECT(I7A20) LENGTH(2)
904	N00019	ADDRESS. HEX LOCATION(00002840) IN CSECT(I7A20) LENGTH(2)
906	N00020	ADDRESS. HEX LOCATION(00002842) IN CSECT(I7A20) LENGTH(2)
912	N00021	ADDRESS. HEX LOCATION(0000284E) IN CSECT(I7A20) LENGTH(2)
924	N00022	ADDRESS. HEX LOCATION(00002860) IN CSECT(I7A20) LENGTH(2)
936	N00023	ADDRESS. HEX LOCATION(00002872) IN CSECT(I7A20) LENGTH(2)
938	N00024	ADDRESS. HEX LOCATION(00002874) IN CSECT(I7A20) LENGTH(2)
944	N00025	ADDRESS. HEX LOCATION(00002880) IN CSECT(I7A20) LENGTH(2)
956	N00026	ADDRESS. HEX LOCATION(00002892) IN CSECT(I7A20) LENGTH(2)
959	N00027	ADDRESS. HEX LOCATION(00002896) IN CSECT(I7A20) LENGTH(2)
971	N00028	ADDRESS. HEX LOCATION(000028A8) IN CSECT(I7A20) LENGTH(2)
983	N00029	ADDRESS. HEX LOCATION(000028BC) IN CSECT(I7A20) LENGTH(2)
995	N00030	ADDRESS. HEX LOCATION(000028CE) IN CSECT(I7A20) LENGTH(2)
997	N00031	ADDRESS. HEX LOCATION(000028D0) IN CSECT(I7A20) LENGTH(2)
1003	N00032	ADDRESS. HEX LOCATION(000028DC) IN CSECT(I7A20) LENGTH(2)
1006	N00033	ADDRESS. HEX LOCATION(000028E0) IN CSECT(I7A20) LENGTH(2)
1018	N00034	ADDRESS. HEX LOCATION(000028F4) IN CSECT(I7A20) LENGTH(2)
1030	N00035	ADDRESS. HEX LOCATION(00002906) IN CSECT(I7A20) LENGTH(2)
1032	N00036	ADDRESS. HEX LOCATION(00002908) IN CSECT(I7A20) LENGTH(2)
1038	N00037	ADDRESS. HEX LOCATION(00002914) IN CSECT(I7A20) LENGTH(2)
1050	N00038	ADDRESS. HEX LOCATION(0000292E) IN CSECT(I7A20) LENGTH(2)
1062	N00039	ADDRESS. HEX LOCATION(00002944) IN CSECT(I7A20) LENGTH(2)
1074	N00040	ADDRESS. HEX LOCATION(00002956) IN CSECT(I7A20) LENGTH(2)
1076	N00041	ADDRESS. HEX LOCATION(00002958) IN CSECT(I7A20) LENGTH(2)
1082	N00042	ADDRESS. HEX LOCATION(00002964) IN CSECT(I7A20) LENGTH(2)
1085	N00043	ADDRESS. HEX LOCATION(00002968) IN CSECT(I7A20) LENGTH(2)
1097	N00044	ADDRESS. HEX LOCATION(0000297C) IN CSECT(I7A20) LENGTH(2)
1109	N00045	ADDRESS. HEX LOCATION(0000298E) IN CSECT(I7A20) LENGTH(2)
1111	N00046	ADDRESS. HEX LOCATION(00002990) IN CSECT(I7A20) LENGTH(2)
1117	N00047	ADDRESS. HEX LOCATION(0000299C) IN CSECT(I7A20) LENGTH(2)
1129	N00048	ADDRESS. HEX LOCATION(000029B6) IN CSECT(I7A20) LENGTH(2)
1132	N00049	ADDRESS. HEX LOCATION(000029BA) IN CSECT(I7A20) LENGTH(2)
1144	N00050	ADDRESS. HEX LOCATION(000029CC) IN CSECT(I7A20) LENGTH(2)
1156	N00051	ADDRESS. HEX LOCATION(000029E2) IN CSECT(I7A20) LENGTH(2)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1168	N00052	465 ADDRESS. HEX LOCATION(000029F4) IN CSECT(I7A20) LENGTH(2)
1170	N00053	468 ADDRESS. HEX LOCATION(000029F6) IN CSECT(I7A20) LENGTH(2)
1176	N00054	471 1157 ADDRESS. HEX LOCATION(00002A02) IN CSECT(I7A20) LENGTH(2)
1179	N00055	474 1145 ADDRESS. HEX LOCATION(00002A06) IN CSECT(I7A20) LENGTH(2)
1191	N00056	477 1133 ADDRESS. HEX LOCATION(00002A1A) IN CSECT(I7A20) LENGTH(2)
1203	N00057	480 ADDRESS. HEX LOCATION(00002A2C) IN CSECT(I7A20) LENGTH(2)
1205	N00058	483 ADDRESS. HEX LOCATION(00002A2E) IN CSECT(I7A20) LENGTH(2)
1211	N00059	486 1192 ADDRESS. HEX LOCATION(00002A3A) IN CSECT(I7A20) LENGTH(2)
1223	N00060	489 1180 ADDRESS. HEX LOCATION(00002A4E) IN CSECT(I7A20) LENGTH(2)
1235	N00061	492 ADDRESS. HEX LOCATION(00002A64) IN CSECT(I7A20) LENGTH(2)
1238	N00062	495 ADDRESS. HEX LOCATION(00002A68) IN CSECT(I7A20) LENGTH(2)
1250	N00063	498 1224 ADDRESS. HEX LOCATION(00002A7A) IN CSECT(I7A20) LENGTH(2)
1252	N00064	501 ADDRESS. HEX LOCATION(00002A7C) IN CSECT(I7A20) LENGTH(2)
1258	N00065	504 1239 ADDRESS. HEX LOCATION(00002A88) IN CSECT(I7A20) LENGTH(2)
1270	N00066	507 1212 ADDRESS. HEX LOCATION(00002AA2) IN CSECT(I7A20) LENGTH(2)
1282	N00067	510 ADDRESS. HEX LOCATION(00002AB8) IN CSECT(I7A20) LENGTH(2)
1285	N00068	513 ADDRESS. HEX LOCATION(00002ABC) IN CSECT(I7A20) LENGTH(2)
1297	N00069	516 1271 ADDRESS. HEX LOCATION(00002ACE) IN CSECT(I7A20) LENGTH(2)
1299	N00070	519 ADDRESS. HEX LOCATION(00002AD0) IN CSECT(I7A20) LENGTH(2)
1305	N00071	522 1286 ADDRESS. HEX LOCATION(00002ADC) IN CSECT(I7A20) LENGTH(2)
1317	N00072	525 1259 ADDRESS. HEX LOCATION(00002AF0) IN CSECT(I7A20) LENGTH(2)
1329	N00073	528 ADDRESS. HEX LOCATION(00002B06) IN CSECT(I7A20) LENGTH(2)
1332	N00074	531 ADDRESS. HEX LOCATION(00002B0A) IN CSECT(I7A20) LENGTH(2)
1344	N00075	534 1318 ADDRESS. HEX LOCATION(00002B1C) IN CSECT(I7A20) LENGTH(2)
1346	N00076	537 ADDRESS. HEX LOCATION(00002B1E) IN CSECT(I7A20) LENGTH(2)
1352	N00077	540 1333 ADDRESS. HEX LOCATION(00002B2A) IN CSECT(I7A20) LENGTH(2)
1364	N00078	543 1306 ADDRESS. HEX LOCATION(00002B3C) IN CSECT(I7A20) LENGTH(2)
1376	N00079	546 ADDRESS. HEX LOCATION(00002B4E) IN CSECT(I7A20) LENGTH(2)
1378	N00080	549 ADDRESS. HEX LOCATION(00002B50) IN CSECT(I7A20) LENGTH(2)
1384	N00081	552 1365 ADDRESS. HEX LOCATION(00002B5C) IN CSECT(I7A20) LENGTH(2)
1396	N00082	555 1353 ADDRESS. HEX LOCATION(00002B76) IN CSECT(I7A20) LENGTH(2)
1399	N00083	558 ADDRESS. HEX LOCATION(00002B7A) IN CSECT(I7A20) LENGTH(2)
1411	N00084	561 1385 ADDRESS. HEX LOCATION(00002B8C) IN CSECT(I7A20) LENGTH(2)
1423	N00085	564 ADDRESS. HEX LOCATION(00002BA2) IN CSECT(I7A20) LENGTH(2)
1435	N00086	567 ADDRESS. HEX LOCATION(00002BB4) IN CSECT(I7A20) LENGTH(2)
1437	N00087	570 ADDRESS. HEX LOCATION(00002BB6) IN CSECT(I7A20) LENGTH(2)
1443	N00088	573 1424 ADDRESS. HEX LOCATION(00002BC2) IN CSECT(I7A20) LENGTH(2)
1446	N00089	576 1412 ADDRESS. HEX LOCATION(00002BC6) IN CSECT(I7A20) LENGTH(2)
1458	N00090	579 1400 ADDRESS. HEX LOCATION(00002BDA) IN CSECT(I7A20) LENGTH(2)
1470	N00091	582 ADDRESS. HEX LOCATION(00002BEC) IN CSECT(I7A20) LENGTH(2)
1472	N00092	585 ADDRESS. HEX LOCATION(00002BEE) IN CSECT(I7A20) LENGTH(2)
1478	N00093	588 1459 ADDRESS. HEX LOCATION(00002BFA) IN CSECT(I7A20) LENGTH(2)
1490	N00094	591 1447 ADDRESS. HEX LOCATION(00002C14) IN CSECT(I7A20) LENGTH(2)
1493	N00095	594 ADDRESS. HEX LOCATION(00002C18) IN CSECT(I7A20) LENGTH(2)
1505	N00096	597 1479 ADDRESS. HEX LOCATION(00002C2A) IN CSECT(I7A20) LENGTH(2)
1517	N00097	600 ADDRESS. HEX LOCATION(00002C40) IN CSECT(I7A20) LENGTH(2)
1529	N00098	603 ADDRESS. HEX LOCATION(00002C52) IN CSECT(I7A20) LENGTH(2)
1531	N00099	606 ADDRESS. HEX LOCATION(00002C54) IN CSECT(I7A20) LENGTH(2)
1537	N00100	609 1518 ADDRESS. HEX LOCATION(00002C60) IN CSECT(I7A20) LENGTH(2)
1540	N00101	612 1506 ADDRESS. HEX LOCATION(00002C64) IN CSECT(I7A20) LENGTH(2)
1552	N00102	615 1494 ADDRESS. HEX LOCATION(00002C78) IN CSECT(I7A20) LENGTH(2)
1564	N00103	618 ADDRESS. HEX LOCATION(00002C8A) IN CSECT(I7A20) LENGTH(2)
1566	N00104	621 ADDRESS. HEX LOCATION(00002C8C) IN CSECT(I7A20) LENGTH(2)
1572	N00105	624 1553 ADDRESS. HEX LOCATION(00002C98) IN CSECT(I7A20) LENGTH(2)
1584	N00106	627 1541 ADDRESS. HEX LOCATION(00002CE2) IN CSECT(I7A20) LENGTH(2)
		630

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
1587	N00107	633 1573 ADDRESS. HEX LOCATION(00002CB6) IN CSECT(I7A20) LENGTH(2)
1599	N00108	636 ADDRESS. HEX LOCATION(00002CC8) IN CSECT(I7A20) LENGTH(2)
1611	N00109	639 ADDRESS. HEX LOCATION(00002CDC) IN CSECT(I7A20) LENGTH(2)
1623	N00110	642 ADDRESS. HEX LOCATION(00002CEE) IN CSECT(I7A20) LENGTH(2)
1625	N00111	645 1612 ADDRESS. HEX LOCATION(00002CF0) IN CSECT(I7A20) LENGTH(2)
1631	N00112	648 1600 ADDRESS. HEX LOCATION(00002CFC) IN CSECT(I7A20) LENGTH(2)
1634	N00113	651 1588 ADDRESS. HEX LOCATION(00002D00) IN CSECT(I7A20) LENGTH(2)
1646	N00114	654 ADDRESS. HEX LOCATION(00002D14) IN CSECT(I7A20) LENGTH(2)
1649	N00115	657 1635 ADDRESS. HEX LOCATION(00002D18) IN CSECT(I7A20) LENGTH(2)
1661	N00116	660 ADDRESS. HEX LOCATION(00002D2A) IN CSECT(I7A20) LENGTH(2)
1673	N00117	663 ADDRESS. HEX LOCATION(00002D40) IN CSECT(I7A20) LENGTH(2)
1685	N00118	666 ADDRESS. HEX LOCATION(00002D52) IN CSECT(I7A20) LENGTH(2)
1687	N00119	669 1674 ADDRESS. HEX LOCATION(00002D54) IN CSECT(I7A20) LENGTH(2)
1693	N00120	672 1662 ADDRESS. HEX LOCATION(00002D60) IN CSECT(I7A20) LENGTH(2)
1696	N00121	675 1650 ADDRESS. HEX LOCATION(00002D64) IN CSECT(I7A20) LENGTH(2)
1708	N00122	678 ADDRESS. HEX LOCATION(00002D78) IN CSECT(I7A20) LENGTH(2)
1720	N00123	681 ADDRESS. HEX LOCATION(00002D8A) IN CSECT(I7A20) LENGTH(2)
1722	N00124	684 1709 ADDRESS. HEX LOCATION(00002D8C) IN CSECT(I7A20) LENGTH(2)
1728	N00125	687 1697 ADDRESS. HEX LOCATION(00002D98) IN CSECT(I7A20) LENGTH(2)
1740	N00126	690 ADDRESS. HEX LOCATION(00002DAA) IN CSECT(I7A20) LENGTH(2)
1752	N00127	693 ADDRESS. HEX LOCATION(00002DBC) IN CSECT(I7A20) LENGTH(2)
1764	N00128	696 ADDRESS. HEX LOCATION(00002DCE) IN CSECT(I7A20) LENGTH(2)
1766	N00129	699 1753 ADDRESS. HEX LOCATION(00002DD0) IN CSECT(I7A20) LENGTH(2)
1772	N00130	702 1741 ADDRESS. HEX LOCATION(00002DDC) IN CSECT(I7A20) LENGTH(2)
1784	N00131	705 ADDRESS. HEX LOCATION(00002DF2) IN CSECT(I7A20) LENGTH(2)
1787	N00132	708 1773 ADDRESS. HEX LOCATION(00002DF6) IN CSECT(I7A20) LENGTH(2)
1799	N00133	711 ADDRESS. HEX LOCATION(00002E08) IN CSECT(I7A20) LENGTH(2)
1811	N00134	714 ADDRESS. HEX LOCATION(00002E1A) IN CSECT(I7A20) LENGTH(2)
1813	N00135	717 1800 ADDRESS. HEX LOCATION(00002E1C) IN CSECT(I7A20) LENGTH(2)
1819	N00136	720 1788 ADDRESS. HEX LOCATION(00002E28) IN CSECT(I7A20) LENGTH(2)
1825	N00137	723 1729 ADDRESS. HEX LOCATION(00002E34) IN CSECT(I7A20) LENGTH(2)
1837	N00138	726 ADDRESS. HEX LOCATION(00002E48) IN CSECT(I7A20) LENGTH(2)
1840	N00139	729 1826 ADDRESS. HEX LOCATION(00002E4C) IN CSECT(I7A20) LENGTH(2)
1852	N00140	732 ADDRESS. HEX LOCATION(00002E66) IN CSECT(I7A20) LENGTH(2)
1855	N00141	735 1841 ADDRESS. HEX LOCATION(00002E6A) IN CSECT(I7A20) LENGTH(2)
1867	N00142	738 ADDRESS. HEX LOCATION(00002E7E) IN CSECT(I7A20) LENGTH(2)
1879	N00143	741 ADDRESS. HEX LOCATION(00002E90) IN CSECT(I7A20) LENGTH(2)
1881	N00144	744 1868 ADDRESS. HEX LOCATION(00002E92) IN CSECT(I7A20) LENGTH(2)
1887	N00145	747 1856 ADDRESS. HEX LOCATION(00002E9E) IN CSECT(I7A20) LENGTH(2)
3974	ODTRK	3971 ADDRESS. HEX LOCATION(000038EE) IN CSECT(I7A20) LENGTH(6)
58	OF	ABSOLUTE. HEX VALUE(00000202) 762 819 851 883 915 1053 1273 1320 1355
57	ON	ABSOLUTE. HEX VALUE(00000200) 962 974 1147 1226 1602 1828
1935	OPTN1	ADDRESS. HEX LOCATION(00002F72) IN CSECT(I7A20) LENGTH(2) 3103 3143 3448 3490 3562 3634 3734 3805 3904
1958	OPTN3	ADDRESS. HEX LOCATION(00002F76) IN CSECT(I7A20) LENGTH(2) 3192 3240
101	PARMARA	ADDRESS. HEX LOCATION(0000196E) IN CSECT(I7A20) LENGTH(1) 769 784 798 812 826 838 858 870 890 902 922 934 954 969 981 993 1016 1028 1048 1060 1072 1095 1107 1127 1142 1154 1166 1189 1201 1221 1233 1248 1268 1280 1295 1315 1327 1342 1362 1374 1394 1409 1421 1433 1456 1468 1488 1503 1515 1527 1550 1562 1582 1597 1609 1621 1644 1659 1671 1683 1706 1718 1738 1750 1762 1782 1797 1809 1835 1850 1865 1877
4129	PAT2	ADDRESS. HEX LOCATION(00003A06) IN CSECT(I7A20) LENGTH(2)
2238	PDATA	ADDRESS. HEX LOCATION(00003068) IN CSECT(I7A20) LENGTH(2) 4121
69	PID	ADDRESS. HEX LOCATION(00001800) IN CSECT(I7A20) LENGTH(1) 4100 4119 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 3298
3334	PIDMSG10	ABSOLUTE. HEX VALUE(0000F1F0) 3298

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
2057	PREP	ABSOLUTE. HEX VALUE(0000000C)
2210	RDDCB	ADDRESS. HEX LOCATION(0000302A) IN CSECT(I7A20) LENGTH(2)
3658	RDDID	ADDRESS. HEX LOCATION(00003646) IN CSECT(I7A20) LENGTH(4)
3416	RGBUF	ADDRESS. HEX LOCATION(000034E4) IN CSECT(I7A20) LENGTH(2)
2064	RICB	ABSOLUTE. HEX VALUE(00000013)
2233	RSBA	ADDRESS. HEX LOCATION(00003054) IN CSECT(I7A20) LENGTH(2)
2166	RSDCB	ADDRESS. HEX LOCATION(00002FEA) IN CSECT(I7A20) LENGTH(2)
0	R0	REGISTER. HEX VALUE(00000000)
0	R1	REGISTER. HEX VALUE(00000001)
0	R2	REGISTER. HEX VALUE(00000002)
0	R3	REGISTER. HEX VALUE(00000003)
0	R4	REGISTER. HEX VALUE(00000004)
0	R5	REGISTER. HEX VALUE(00000005)
0	R6	REGISTER. HEX VALUE(00000006)
0	R7	REGISTER. HEX VALUE(00000007)
1998	SCTID	ADDRESS. HEX LOCATION(00002F80) IN CSECT(I7A20) LENGTH(2)
3373	SEEKK	ADDRESS. HEX LOCATION(00003490) IN CSECT(I7A20) LENGTH(4)
3817	SEKK1	ADDRESS. HEX LOCATION(000037A4) IN CSECT(I7A20) LENGTH(4)
2177	SKDCB	ADDRESS. HEX LOCATION(00002FFA) IN CSECT(I7A20) LENGTH(2)
3851	SKER	ADDRESS. HEX LOCATION(00003828) IN CSECT(I7A20) LENGTH(2)
3684	SNSTS	ADDRESS. HEX LOCATION(000036AC) IN CSECT(I7A20) LENGTH(4)
3415	SPEED	ADDRESS. HEX LOCATION(000034E0) IN CSECT(I7A20) LENGTH(2)
2055	START	ABSOLUTE. HEX VALUE(0000000A)
4134	STS	ADDRESS. HEX LOCATION(00003A10) IN CSECT(I7A20) LENGTH(4)
3983	STSER	ADDRESS. HEX LOCATION(0000390C) IN CSECT(I7A20) LENGTH(6)
104	SUPSTAT	ADDRESS. HEX LOCATION(000019C4) IN CSECT(I7A20) LENGTH(1)
3393	TMDIG	ADDRESS. HEX LOCATION(00003494) IN CSECT(I7A20) LENGTH(4)
4040	TMERR	ADDRESS. HEX LOCATION(0000396A) IN CSECT(I7A20) LENGTH(4)
3863	TRKNO	ADDRESS. HEX LOCATION(00003848) IN CSECT(I7A20) LENGTH(2)
3849	TRKOD	ADDRESS. HEX LOCATION(00003820) IN CSECT(I7A20) LENGTH(6)
3989	TSEEK	ADDRESS. HEX LOCATION(0000391C) IN CSECT(I7A20) LENGTH(2)
3955	TSKK1	ADDRESS. HEX LOCATION(000038A6) IN CSECT(I7A20) LENGTH(4)
92	TUMSGWTR	ADDRESS. HEX LOCATION(000018BA) IN CSECT(I7A20) LENGTH(1)
76	TUPARM1	ADDRESS. HEX LOCATION(0000189A) IN CSECT(I7A20) LENGTH(1)
77	TUPARM2	ADDRESS. HEX LOCATION(0000189C) IN CSECT(I7A20) LENGTH(1)
98	TURESUL	ADDRESS. HEX LOCATION(000018C8) IN CSECT(I7A20) LENGTH(1)
2027	TURTN	ADDRESS. HEX LOCATION(00002FBA) IN CSECT(I7A20) LENGTH(2)

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DECLARED	NAME	ATTRIBUTES AND REFERENCES
74	TUSTATUS	ADDRESS. HEX LOCATION(00001818) IN CSECT(I7A20) LENGTH(1)
75	TUWORK	ADDRESS. HEX LOCATION(0000181A) IN CSECT(I7A20) LENGTH(1)
3523	T7A01I	ADDRESS. HEX LOCATION(00003570) IN CSECT(I7A20) LENGTH(2)
3516	T7A01X	ADDRESS. HEX LOCATION(00003566) IN CSECT(I7A20) LENGTH(6)
2036	T7A02	ADDRESS. HEX LOCATION(00002FC2) IN CSECT(I7A20) LENGTH(6)
3560	T7A03	ADDRESS. HEX LOCATION(00003574) IN CSECT(I7A20) LENGTH(4)
3580	T7A03K	ADDRESS. HEX LOCATION(000035BA) IN CSECT(I7A20) LENGTH(2)
3600	T7A03L	ADDRESS. HEX LOCATION(000035E4) IN CSECT(I7A20) LENGTH(2)
3584	T7A03M	ADDRESS. HEX LOCATION(000035C2) IN CSECT(I7A20) LENGTH(6)
3632	T7A06	ADDRESS. HEX LOCATION(000035E8) IN CSECT(I7A20) LENGTH(4)
3732	T7A08	ADDRESS. HEX LOCATION(000036D4) IN CSECT(I7A20) LENGTH(4)
3803	T7A09	ADDRESS. HEX LOCATION(0000376A) IN CSECT(I7A20) LENGTH(4)
3942	T7A11	ADDRESS. HEX LOCATION(0000386E) IN CSECT(I7A20) LENGTH(4)
4016	T7A12	ADDRESS. HEX LOCATION(00003920) IN CSECT(I7A20) LENGTH(4)
4089	T7A19	ADDRESS. HEX LOCATION(00003984) IN CSECT(I7A20) LENGTH(4)
3446	T7A50	ADDRESS. HEX LOCATION(000034E8) IN CSECT(I7A20) LENGTH(4)
3456	T7A50X	ADDRESS. HEX LOCATION(00003508) IN CSECT(I7A20) LENGTH(4)
3769	T7A89	ADDRESS. HEX LOCATION(00003766) IN CSECT(I7A20) LENGTH(4)
3980	U7A11	ADDRESS. HEX LOCATION(00003904) IN CSECT(I7A20) LENGTH(4)
2199	VRDCB	ADDRESS. HEX LOCATION(0000301A) IN CSECT(I7A20) LENGTH(2)
3666	VRID	ADDRESS. HEX LOCATION(00003666) IN CSECT(I7A20) LENGTH(6)
3365	VSEC	ADDRESS. HEX LOCATION(00003470) IN CSECT(I7A20) LENGTH(4)
3361	VSEEK	ADDRESS. HEX LOCATION(0000345C) IN CSECT(I7A20) LENGTH(4)
2061	WRITO	ABSOLUTE. HEX VALUE(00000010)
2062	WRIT1	ABSOLUTE. HEX VALUE(00000011)
2227	WRSID	ADDRESS. HEX LOCATION(00003048) IN CSECT(I7A20) LENGTH(2)
1974	XE	ABSOLUTE. HEX VALUE(00000024)
1972	XI	ABSOLUTE. HEX VALUE(00000022)
2986	XIO	ADDRESS. HEX LOCATION(00003130) IN CSECT(I7A20) LENGTH(4)
3172	XIOCK	ADDRESS. HEX LOCATION(00003204) IN CSECT(I7A20) LENGTH(2)
3179	XIOCO	ADDRESS. HEX LOCATION(00003216) IN CSECT(I7A20) LENGTH(2)
3189	XIOCQ	ADDRESS. HEX LOCATION(0000322C) IN CSECT(I7A20) LENGTH(4)
2994	XIOCS	ADDRESS. HEX LOCATION(00003142) IN CSECT(I7A20) LENGTH(6)
3181	XIOCV	ADDRESS. HEX LOCATION(0000321A) IN CSECT(I7A20) LENGTH(2)
3192	XIOCX	ADDRESS. HEX LOCATION(00003238) IN CSECT(I7A20) LENGTH(4)
2989	XIODG	ADDRESS. HEX LOCATION(00003136) IN CSECT(I7A20) LENGTH(6)
3065	XIOER	ADDRESS. HEX LOCATION(000031A2) IN CSECT(I7A20) LENGTH(2)
2998	XIO1	ADDRESS. HEX LOCATION(00003152) IN CSECT(I7A20) LENGTH(4)
3011	XIO2	ADDRESS. HEX LOCATION(00003178) IN CSECT(I7A20) LENGTH(2)
3023	XIO8	ADDRESS. HEX LOCATION(0000318E) IN CSECT(I7A20) LENGTH(2)
3411	XTMDG	ADDRESS. HEX LOCATION(000034DA) IN CSECT(I7A20) LENGTH(2)
62	XTRNL	ABSOLUTE. HEX VALUE(00000001)
3592	X7A03	ADDRESS. HEX LOCATION(000035DC) IN CSECT(I7A20) LENGTH(4)
3690	X7A06	ADDRESS. HEX LOCATION(000036C4) IN CSECT(I7A20) LENGTH(6)
3858	X7A09	ADDRESS. HEX LOCATION(0000383E) IN CSECT(I7A20) LENGTH(6)
3984	X7A11	ADDRESS. HEX LOCATION(00003912) IN CSECT(I7A20) LENGTH(6)
4042	X7A12	ADDRESS. HEX LOCATION(00003970) IN CSECT(I7A20) LENGTH(6)
4126	X7A16	ADDRESS. HEX LOCATION(00003A02) IN CSECT(I7A20) LENGTH(4)
2220	ZERO0	ADDRESS. HEX LOCATION(0000303A) IN CSECT(I7A20) LENGTH(2)